Scientific American.

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Rail Road News.

North American Colony Railroad.

In the House of Lords on the 8th inst., Lord Stanly presented a petition from magistrates, free-holders, and others, of the county of Westmoreland, in Canada, referring to a project which was under consideration for extending a line of railway communication through the whole province of Nova Scota, New Brunswick, and Canada, to Quebec, pointing out the great advantage that would be derived, both locally and socially, from such a measure, and praying that it might meet the support of the government. They proposed that Parliament should give a guarantee under which a sum might be raised equal to that which the colonists themselves were prepared to guarantee.

Nashville and Chattanooga Railroad.

Three hundred Irish laborers have arrived at Chattaneoga to break ground on the Nashville and Chattanooga road. The work before them is most arduous but magnificent in contemplation. They commence operation at the base of the Look-out Mountain.

The termination of the mountain on the River is a perpendicular wall of rock, about six hundred feet in height. Along the base of this, an immense wall is to be built, much of which will have its foundation in the bed of the River, and be carried to such a height as to be above all freshets and dangers from high water.

Buffalo and Detroit Railway.

The Commercial Advertiser states that a charter has been granted by the Canadian Parliment for a railway from the Niagara river, opposite that city, to Sandwich, opposit Detroit. Distance 227 miles. Route easy, the the country being a dead level. The Michigan Central Railroad Co. are understood to favor the project.

The Legislature of Maine have incorporated the European and North American Railway, with an express limitation as to stockholders' liability beyond their stock—an exception never before granted in Maine. They have also appropriated $5000 for a survey as prayed for by John A. Poor and others.

The line of Railroads between Albany and Buffalo, N. Y., have done a good business this season. During three weeks of the present month 18,905 passenger passengers passed over it, being an increase of 50 per cent. over the same period of last year.

The Pennsylvania Central Railroad will be opened at Holidaysburg on the 1st of September. This will complete the chain from Philadelphia to Johnstown—280 miles. At Johnstown passengers can take stages or canal boats for Pittsburg.

The line of railroad is to be extended from Montreal, Canada, to meet the lines which converge at Rouse's Point and lead to Boston and New York on the Atlantic.

IMPROVEMENT IN PADLOCKS.

Figure 1.

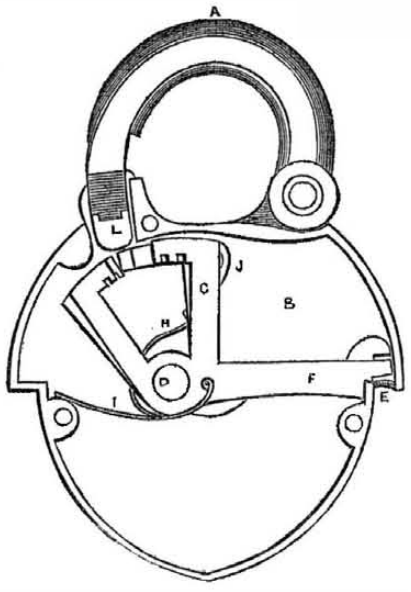
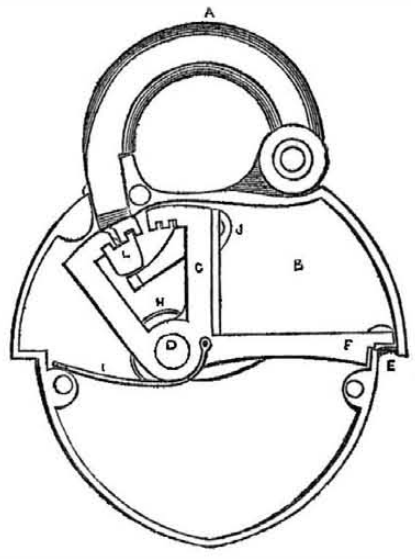
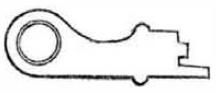


Figure 2.



This improvement is the invention of Mr. F. C. Goffin, of Morristown, in Morris Co., N. J., and he has taken measures to secure it by patent. Fig. 1 is an interior view, showing the position of the several parts, when unlocked. Fig. 2 is an interior view of the padlock, with the front plate removed, and the several parts in their proper positions when locked. Fig. 3 is the key, having prongs of unequal length. The same letters refer to like parts. A is the bow catch; B is the body of the lock. C are tumbler sectors (there are three of them) all fixed on the axis D. F are the shanks of them, they rest upon the side of the lock and directly over the aperture, E,

Fig. 3.

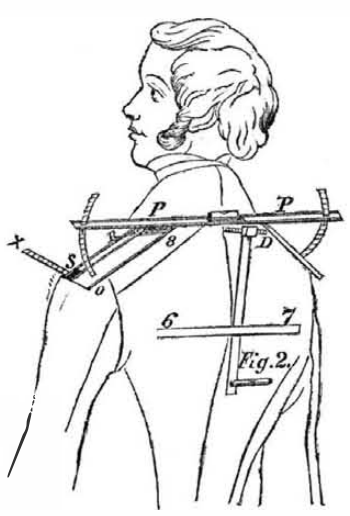


which receives the key. H is the spring of the first tumbler sector; it passes round and catches under one arm, I, of the bent lever, J. The other arm of this lever presses up against the end of the bow catch, A, when the instrument is locked. When the jaw of the bow catch is released from the tumbler sectors, it is then thrown out by the lever being acted upon by the spring, H. This spring performs two offices, viz., throwing the left side of the tumbler sector over the jaw of the bow latch, A, and ejecting the bow latch from the lock. L is the jaw of the bow latch. It has a recess formed near the end, and has two small projections which catch into recesses on the inner surfaces of the sides of the tumbler sectors. The tumbler sectors have spaces cut out of them to allow the bow, A, to pass through them. The spaces on the sectors must be all on line, to allow the end of the bow latch to pass out. The key must be made of such a length as will throw the left side of the tumbler sector, on which it acts, clear of the jaws, and at the same time not allow the right side to catch it. It is not easy to see how the key fits at E, by this side view, but suppose the key is placed flat with its edge toward the front and pushed up the three levers, F, (all independent) will be thrown in a line back, and the jaw, L, fig. 2, will be thrown out, as in fig. 1. The principle of it consists in having the tumbler sectors placed separately on one axis, and operated by a key of unequal prongs—the whole tumblers working simultaneously, or else the lock will not be opened for the springs of the sector tumblers act separately. The bow, A, must be pushed down before the key will operate, as the notches seen on the tumblers hold the jaw, and this must be released before the tumblers can be thrown back to let the jaw out.

More information may be obtained of Messrs. Logan, Vail & Co., Agts., 25 Cliff st., this city.

Self-Varying Tailors' Measure.

Fig. 1.



This duplex instrument is the invention of Mr. Amos Stocker, of Ogdensburg, St. Lawrence Co., N. Y., and secured to him by patent on the 28th of last May. The object of the invention is to get the true form of the shoulders either erect or rounded, to enable the tailor to cut the cloth for a coat, from given lines, to the proper shape, upon mathematical principles. The instrument consists of two parts, both embraced in the engraving. They are used together but are separate. Figure 1 represents the one across the shoulders, and fig. 2 is the one for measuring the perpendicular of the back. The instrument, fig. 1, has a small spirit level fixed on its middle part. It is formed of a straight piece of brass plate, P P, which is laid on the shoulders, and which has a notch for the neck, with two side plates, R, attached by hinges, 8, to its underside. These lower plates may be termed the quadrant leaves, as they have curved indexes, S, attached to them, which slide through slits in the plate, P P. When the plate, P P, is laid on, the leaves, R, drop down on the shoulders, and the inclination of the shoulders, is indicated on the curved indexes. The plate is made in two parts to slide into one another to make it shorter. To the leaves on the front side there are attached indexes, X, which can slide out and in crosswise. These are for the purpose of marking the shoulder bone and indicating the width between the top of the vertebrae, on the spirit level, where the measure is centered, and the chest, also the front breadth of the shoulders. This at once tells correctly the amount of stoop or bend over the shoulders—how much his shoulders are contracted or curved from the straight line inwards, and *vice versa*.

The back instrument, fig. 2, has a cross-rod, 6 7, a perpendicular bar, a fixed spirit level at the bottom, and a sliding index gauge, D, at the top. This instrument is laid perpendicular on the back, and by sliding the gauge at D through the slot of the perpendicular bar, it will measure the number of inches the top of the shoulders are from the perpendicular line; in other words, how straight or bowed the back is. The proper form for cutting the important parts of a coat to make it fit correctly are hereby measured in such a way that it is impossible to go wrong in any case. The coat cut by this measure will always be a true fit.

The inventor is a tailor—one who knows what will and what will not answer. Communications may be addressed to him at Ogdensburg.

Useful Receipts.

Solvents for India Rubber.

Ether for this purpose should be agitated with water and decanted. Benzole will dissolve caoutchouc with warmth and long digestion. Rectified coal naptha forms an imperfect solution employed in Mackintosh's waterproof fabrics. Oil of turpentine, rendered pyrogenous by absorbing it with bricks or porous ware, and distilling it without water and treating the product in the same way, is also used for this purpose. It is stated that the solution, on evaporation, does not leave the caoutchouc in a sticky state. Bisulphuret of carbon is a good solvent, dissolving the gum without heat. This constitutes Parker's Patent Solvent. Chloroform is an excellent but rather expensive solvent. India rubber is rendered more readily soluble by first digesting it with a solution of carbonate of soda, or water of ammonia.

Compound for Promoting the Blowing of Flowers.

Sulphate of ammonia 4 oz., nitre 2 oz., sugar 1 oz., hot water a pint. Keep it in a well corked bottle. For hyacinth glasses add 8 or 10 drops of the liquid to the water, changing the water every 10 or 12 days. For flowering plants in pots add a few drops to the water employed to moisten them.

Scouring Drops for Removing Grease.

1st. Alcohol, pure, 6 oz., camphor 2 oz., rectified essence of lemon 8 oz.

2nd. Camphene 3 oz., essence of lemon 1 oz., mix. Some direct them to be distilled together.

3rd. (French.) Camphene 8 oz., pure alcohol 1 oz., sulphuric ether 1 oz., essence of lemon 1 drachm.

4. Spirit of wine a pint, white soap 3 oz., ox gall 3 oz., essence of lemon ¼ oz.

The Greenock Advertiser (Scottish) says; "A strong probability exists of a direct passenger communication being opened between Greenock and New York, by a line of screw steamers, the property of Greenock owners."

The establishment of a line of American steamships between Boston and Liverpool is among the things talked about in these days of speculation and enterprise.

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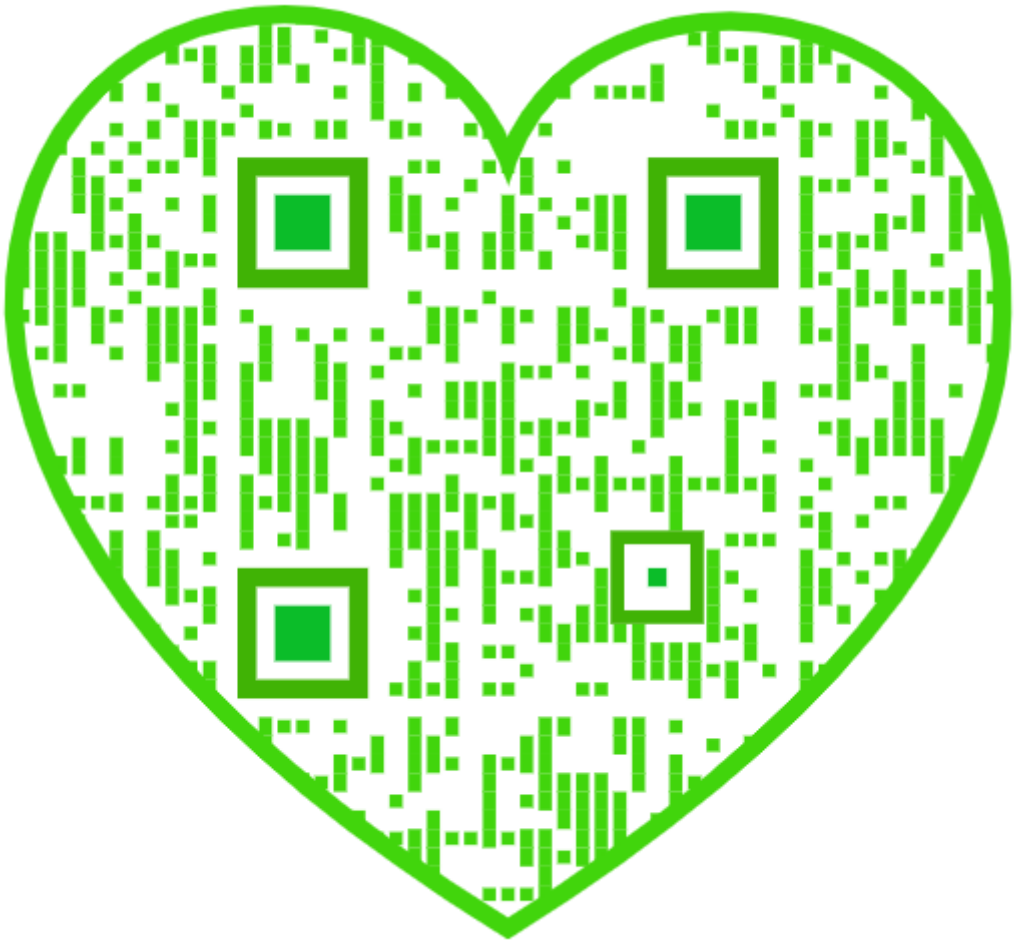

Miscellaneous.

American Association for the Advancement of Science.

Having mentioned last week that this Association met at New Haven on the 19th inst., Prof. Bache, the President, in the chair, we will now proceed to give an abstract of their proceedings :—

ELECTRICITY.

Professor Olmstead, of Yale, opened with remarks on electrical discharges. He said the city of New Haven was peculiarly liable to be struck by lightning owing to the soil being sandy, and in dry weather during the season of thunder storms it presents to the conductor a highly resisting medium. Spots habitually damp invite an electric discharge. In Stamford, Conn., a house of public worship furnished with rods, was once struck, and from the base of the rods the mud was thrown up as high as the eves of the building. It was a common opinion South that pine trees were more liable to be struck by lightning than others, but they only exhibited greater marks of its action from its resinous character. When trees are full of sap or wet with rain, they are good conductors and transmit the charge without receiving marks of violence. Lightning rods should be constructed of good conducting materials, and should be conducted freely into a well or some moist place.

Prof. Loomis, of New York, made some singular remarks about electrical phenomena in New York. There are some electrical houses in which a stranger, upon enterlng and attempting to shake hands, receives a shock, and ladies on attempting to kiss each other are saluted with a spark. A spark was perceived when the hand was brought near the metal knob of the door, and a great number of such phenomena. The Prof. had come to the conclusion that the electricity is created by the rubbing of the shoes over the carpets. He had tried experiments with rubbing leather upon woollen cloth, and found a quantity of electricity generated, and he had come to the conclusion that electricity must be generated when a person walks across a carpet with a shuffling motion, and heavy velvet carpets produce this effect best.

[We know of a case where some loose wool of the carpet was set on fire by electricity generated in this way.]

Prof. Silliman related an instance where, on the return home of a navy officer he was met with the affection of a fond wife, and experienced a shock of electricity. She was in a state of electrical excitement.

Prof. Henry stated that electricity moved along the surface in the case of shocks. A needle in a coil of wire, or in the interior of a gun barrel, was not magnetized, while one on the exterior was.

Prof. Bache stated that all the phenomena in respect to electrical shocks on bodies, could be explained by the high repulsion of the parts and by the action on the side of the least resistance. The question respecting what kind of trees were most liable to be struck was a difficult one.

LIGHTNING RODS.

Professor Loomis was then heard upon the proper height of the lightning rod. He said—The rule prescribed by the French Academy of Science, and copied into almost all the works of electricity for determining the proper height of a lightning rod, is that a rod will protect a circle whose radius is twice the height of the rod. A case recently occured in Tallmadge, Summit Co., Ohio, which appears to demonstrate that this rule is unsafe. On the afternoon of July 27th, about six o'clock, there was a slight shower of rain, accompanied by a few flashes of lightning. One flash was remarkably vivid, and was succeeded almost instantly by a loud report. In an instant afterwards, a large pile of shavings, lying on the west side of a carriage shop, was found in full blaze. The shavings had recently been carried out of the shop, and were quite dry, and as no fire had been used in that vicinity for several weeks and no other mode is known in which the shavings could have been ignited, it is inferred to have been caused by the electric discharge. The carriage shop was furnished with a lightning rod, and it was a matter of surprise that the fluid should have struck the ground so near to the rod. The top of the rod was fifty-nine feet high, above the shavings, and the shavings were 100 feet distant from a point vertically under the top of the rod. According to the rule above quoted, this rod should have afforded complete protection to a distance of 118 feet from its base: whereas, the shavings were struck at a distance of 100 feet, and that, too, where, being elevated only a few inches above the general level of the ground, they might be presumed to afford no peculiar attraction for the lightning. This rod appears to have been constructed in accordance with the usual rule. It is terminated by three points, which are gilded, and appear to be in tolerable good condition. About ten feet from the top is a break in the rod, and the two portions are looped together. From this point, the rod is continuous to the bottom, and enters the ground to the depth of about three feet, where the earth, at the time referred to, was quite moist. The rod is about five-eighths of an inch in diameter. This case demonstrates to my mind, that it is unsafe to rely upon a rod to protect a circle whose radius is more than once and a half the height of the rod, at least upon the west side being that from which thunder showers generally come to this latitude.

Professor Henry gave an account of some experiments in Washington, where a rod was surmounted by a ball, which was struck by lightning in three places, during a storm after its erection.

With regard to trees struck by lightning, he had found, upon examination, that there would not be the slightest mark of electricity on the upper branches, but it appeared to strike at the trunk, at that part from whence the branches spring out. He then told a curious fact of a man having been killed in a house, by lightning, and, afterwards, the outline of his figure remained on the wall as if the electricity had gone into it.

COMPOUND OF ROSIN AND LARD—USEFUL INFORMATION.

Prof. Olmstead read a paper on some curious properties of a compound of rosin and lard. He said "an accident first led me to observe something remarkable in this compound, and I have since made a few experiments, with a view of further investigating the relation between these two substances. Wishing to fit the brass of an old air pump, so as to make a close joint with the receiver, I had been accustomed to apply to the plate a disk of leather, saturated with lard. With the hope of rendering it more completely impenetrable to air, I added to the lard a small quantity of rosin, and melted them together. I expected the rosin would give greater hardness to the lard, and make it fill the pores of the leather more effectually, but was surprised to find that the change produced by the rosin was to impart to the lard a tendency to remain in the fluid state, so that, in a winters day, the compound, when cold, remained in the state of a semi-fluid, at the temperature of a room moderately heated. I found, also, that this preparation, when applied to the leather of the air pump, rendered it peculiarly soft, and, at the same time very impermeable to air, so as to form a good joint with the receiver. But what more arrested my attention particularly, was, that having inadvertantly left the leather on the plate of the pump for nearly a year, during which time the use of the apparatus was discontinued, I supposed, when I took it out again, that I should find the brass plate much corroded, as I had sometimes seen it before, when exposed for a much less time to the action of the oiled disk of leather; but, on the contrary, the brass was entirely free from the corrosion, and I have uniformly found the same to be the case since, however long the leather may have remained in contact with the plate. This observation suggested another and more important use of the same preparation for lubricating the piston, which being likewise of brass, and moving in brass barrels, had before occasioned me much inconvenience, by their liability to corrode by the action of the oil used on lubricating on the brass. Moreover, the tendency of the preparation to assume the fluid state by the friction of the piston, made a very convenient and effectual application for this purpose. I have recently made a few experiments, with a view of ascertaining the melting point of this compound, and the proportions of the ingredients which give the lowest melting point. The best proportions are by weight—lard three parts, rosin one part. If the rosin be added in fine powder, and the mixture well stirred, (without the application of heat,) it softens and so nearly approaches a fluid as to run freely when taken upon a stirring-rod, at a temperature of 72 degrees. On melting the mixture, and in setting aside to cool, the following changes take place:—At 90 degrees it remains transparent and limped; at 87 degrees, a pellicile begins to form on the surface, and soon after it begins to grow slightly viscid, and as the temperature descends, it passes through different degrees of viscidity, like oils of different qualities, until at 76 degrees, it becomes a dense semi-fluid. It is an unexpected result, that the addition of one part in four of rosin, whose melting point is near 300 degrees, to lard, whose melting point is at 97 degrees, should render it more fluid, reducing its melting point to 90 degrees, imparting to it the properties of a semi-fluid, at a temperature as low as 76 degrees, and even rendering the preparation of a softer consistancy than lard itself, at a temperature as low as 60 degrees. This compound of lard and rosin has, therefore, two somewhat remarkable properties:—1. It prevents in the lard, and probably in all the animal oils and fats, their tendency to generate an acid, and thus to undergo spontaneous decomposition. A much smaller portion of rosin than one-fourth, gives to lard this property, destroying as it does the tendency of these substances to oxidation. Several important practical applications result from this property. Its use for lubricating surfaces of brass or copper has already been adverted to. It is equally applicable to surfaces of sheet iron. I have found a very thin coating applied with a brush, sufficient to preserve Russia iron stoves and grates from rusting during summer, even in damp situations. I usually add to it a portion of black lead, and this preparation, when applied with a brush in the thinnest possible film, will be found a complete protection to sheet iron stoves and pipes. The same property renders the compound of lard and rosin, a valuable ingredient in the composition of shaving soap. The quality of shaving soap is greatly improved by a larger proportion than is usually employed, so as to completely saturate the alkali, but such soap easily becomes rancid when wet with water, and suffered to remain damp, as it commonly is when in use. If a certain proportion of compound is added to windsor soap, (say one-half its weight) the tendency to grow rancid is prevented. A very soft and agreeable shaving compound, or "cream," may be made by steaming in a close cup a cake of any common shaving soap, so as to reduce it to a soft consistance, and then mixing intimately with it, half its weight of our resinous preparation, adding a few drops of some odoriferous substance. The same compound forms an excellent water-proof paste for leather. Boots, when treated with it, will soon afterwards take the usual polish when blacked, and the soles may be saturated with it without danger of soiling the floor, as it does not rub off, while the leather is rendered, in a high degree, impervious to water. The perfect solution into which rosin passes when heated with oil, suggested the possibility of improving, in this way, the quality of oils used for illumination, and by its reducing the melting point of lard, to render that more suitable for burning in solar lamps. I therefore, added powdered rosin to lard oil, in the proportion of 8 ounces of rosin to one gallon of oil and applied a moderate heat, sufficient to produce perfect solution. I then filled two solar lamps, equal in all respects, the one with lard oil, the other the same, holding the rosin solution, and regulating the flames so as to be as nearly the same size as possible. I measured by the method of shadows, the comparative intensities of light, which I found to be as 7 to 5 in favor of the prepared oil. This burned with a flame of peculiar richness, plainly exceeding in density that from the simple oil; but after two hours the flame of the prepared oil began to decline slowly, and soon became inferior to the other, an effect which doubtless arose from the clogging of the wick. I had hoped, on account of the perfect solution which the rosin seemed to undergo, that the compound would burn freely without encountering this impediment; but in this respect I was disappointed, and can only say that if some means can be devised for avoiding the tendency to clog the wick, the addition of a small portion of rosin to lamp oil or lard, will add essentially to its value for burning in solar lamps, by rendering it less liable to congeal, and by increasing its illuminating power.

NATURAL HISTORY.

Professor Agassiz, in his comparison of the face of fishes with that of other vertebrates, drew figures of each on the exhibition board, and created some laughter throughout the meeting. He said there was no one who has not been led some time or other, when looking at the face of a friend, to see a resemblance between it and some animal. He had seen such resemblence, and it had led him to make inquiries why it was so. He was satisfied that such a thing exists, and the unity which exists between all classes of vertebrates, shows that there must be some foundation for such resemblance. We find one common structure of the face in general. Fishes, as a class, rank the lowest as vertebrates; there are peculiarities in them which are not observed in any other—the fins, the moveable regions about the eye, and the moveable regions of the lower jaw, &c. &c. The learned Professor then described certain peculiarities in the formation of fishes, and illustrated them by drawings.

[It is possible that Prof. Agassiz may have embraced a theory by which he can trace certain resemblances between every species of vertebrates, just as people can trace out figures and scenes in the ruddy coal fire. Or it may be he has a taste for that kind of uniformity which Sir Walter Scott describes as belonging to a Scottish laird, who, having hanged up a criminal on one side of the road, was so offended at the oddity of the scene, that he hanged up the first man who came along, "to make things *look uniform* !"

LITERARY NOTICES.

SARTAIN'S UNION MAGAZINE—The September number of this popular and beautiful magazine has been sent us by the New York Agents, Messrs. Dewitt & Davenport, Tribune Buildings; it contains a steel portrait of President Fillmore, Fredrika Bremer, besides fifteen large wood engravings of views in Oregon and California. This number is a beautiful one.

GODEY'S LADY'S BOOK.—The September number of this standard Magazine has made it appearance, and abounds as usual with the choicest and most seasonable matter of the day. This number contains contributions from thirty-two of the most talented literary writers of the day, besides twenty fine engravings, some of which are superb, and have never been equalled by any other periodical. H. Long & Bro., Agents, 43 Ann street.

DISCOVERY OF THE CAUSE AND CURE OF THE CHOLERA.—S. X. Ball, Esq., Chemist, 151 Fulton st., has just issued in neat form a little pamphlet of 36 pages, in which he gives some important directions as to the proper treatment of the Cholera in its first stages, and also the remedies to be applied to effect a cure. Mr. B. also gives some useful hints in his little book on avoiding epidemic influences and for the preservation of general health, which should be known by every one. Price of the book 25cts.

THE OHIO HARMONIST.—A collection of Psalm and Hymn tunes, by celebrated authors: compiled by Alexander Auld, and published by him at Cincinnati, Ohio. It also contains a supplement of Temperance Songs, as well as the rudiments of music for new beginners.

HOLDEN'S DOLLAR MAGAZINE, for September, is now ready. Messrs. Fowler & Deitz, publishers; it contains a well executed engraving of the late Sir Robert Peel, besides several other engravings, and a choice contents.

Shakespear's Dramatic Works, No. 22, Phillips, Sampson & Co., publishers, Boston; for sale by Dewitt & Davenport. It contains the first part of King Henry VI., with an elegant steel engraving of Joan of Arc.

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History and Construction of the Thermometer.

The invention of the Thermometer, like almost every other discovery of great utility, has been claimed for different philosophers, and national vanity has occasionally been enlisted in support of rival claimants. There seems but two, however, whose titles are worthy of notice.

The Italian writers generally give the honor to their countryman, Santorio Santorio, long a physician at Venice, and afterwards a professor at Padua, and who had obtained just celebrity by his discovery of the insensible perspiration of the animal frame. The Dutch philosophers, on the other hand, unhesitatingly ascribe it to Cornelius Drebbel, a physician of Alkmaar, who appears to have enjoyed a high reputation as a chemist, a mathematician, and an inventive mechanical genius.

Dr. Santorio expressly claims the invention as his own, and he is supported by Borelli and Malpighi. The title of Drebbel is considered as undoubted by Boerhave and Musschenbroek. It would now, perhaps, be difficult to decide the controvery; but it is worthy of remark, that Santorio, who was born in 1561, and died in 1636, did not publish his claim to the invention until 1626; and although thermometers are alluded to by Robert Flud within the first quarter of that century, yet, as he travelled both in Germany and Italy for six years, we can draw no inference from that circumstance. Certain it is, that thermometers were constructed about the same time, both in Italy and in Holland, on the same principle; and though the instruments of Drebbel were well known in Holland and England before the fame of Santoria appears to have reached the northwest of Europe, the most recent writers have generally considered the latter as the real inventor of the thermometer.

It is, however, by no means improbable that each may be justly entitled to the merit of a discoverer.

Be this as it may, the instrument, from its imperfect construction, was of very little use in the hands of either, and required the successive labors of different philosophers to render it a tolerably accurate indicator of the variations of temperature.

The thermometer ascribed to Santorio and Drebbel is precisely the same in form and principle; it consists of a glass tube, with a ball on one of its extremities, and having the other end open. A portion of the air in the ball is expelled by heat, and then the open end of the tube is immersed in any liquid contained in the cup. As the ball cools the included air diminishes in volume, and the liquid is forced into the stem by the pressure of the atmosphere, until it replaces the volume of air which was expelled by the heat. When a heated body is applied to the ball, the air will again be expanded and depress the liquid in the stem; and if this stem be a cylinder, a scale of equal parts applied to it will enable the observer to form some idea of the difference between the relative temperature of bodies applied to the ball.

On the removal of the heat, the volume of the included air again diminishes, and the liquid again rises in the stem by atmospheric pressure—until the elasticity of the air within the instrument is in *equilibrio* with that of the surrounding atmosphere.

Instruments constructed on this principle are called *Air Thermometers*—because their action depends on the elasticity of air; and from their having been originally employed to mark the changes of atmospheric temperature, they are described by the older writers under the name of weather glasses; a denomination also given to barometers.

Drebbel appears to have devised a variety of the instrument more delicate in its indications. The globular form of the common bulb and its small size, rendered it less susceptible of slight changes than a flattened bulb of larger diameter. In the obscure and often almost unintelligible writings of Dr. Robert Flud, published at the beginning of the seventeenth century, frequent mention is made of the thermometer, or, as he calls it *speculum calendarium;* and the common air is repeatedly figured in his singular work, "De Philosophia Moysiaca," published in 1638, with its stem divided equally into an ascending and and descending series, each of seven degrees, respectively appropriated to summer and winter. It is obvious that the size of an air thermometer, on such principles, is only limited by convenience and the length of the column of liquid which the pressure of the atmosphere can sustain in the tube. As originally made, they were unwieldy, they could not be applied to high temperatures, and were, besides, liable to two very important objections, as indicators of the atmospheric changes of temperature,—they were liable to be affected not only by heat and cold, but by the varying pressure of the atmosphere, and the scales adapted to them were arbitrary and without fixed points for the comparison of observations made with different instruments.

The first objection was foreseen and obviated by the scientific members of the Florentine Academy, assembled under the patronage of the Grand Duke of Tuscany. In the first article, in the published transactions of that body, we find a full description and delineation of a thermometer from which the influence of atmospheric pressure is excluded. The expansion of spirit of wine is employed to ascertain the temperature, instead of the dilation of air; and the instrument is sealed *hermetically*, as it is termed, or has its orifice closed by melting the glass, after the introduction of as much spirit as fills the bulb and a portion of the stem. The method employed by the Florentine academicians is nearly that still used by the makers of the instruments; namely, by heating the bulb in the flame of a lamp, to expel the air, and then immersing the open end of the tube in the liquid destined to fill the thermometer. As the ball cools, the atmospheric pressure forces the liquid into the stem and ball, to supply the *vacuum;* and the orifice is closed by melting with the blowpipe the end of the tube, from which any excess of the liquid may be previously expelled by again heating the ball.

The Florentine Academicians appear also to have been aware of the necessity of adopting some fixed scale to the tube; but their attempts were not very successful. They described the thermometer as consisting of a ball and tube of such relative size "that on filling it to a certain mark of its neck with spirit, the cold of snow, and ice will not cause it to fall below 20°, measured on the stem; nor, on the other hand, the greatest heat of summer expand it more than 80°."

This method is evidently erroneous, inasmuch as the last point could be of no determined temperature; and their system of graduation is in itself rather rude. The tube is directed to be divided by compasses into ten equal parts, these divisions are to be marked "by a little button of *white* enamel," subdivided by degrees of *black*.

This instrument was variously modified by them to suit different purposes. The ball was occasionally enlarged and the tube reduced in thickness to render the instrument more sensible; and in the work already quoted, we find a figure thermometer of this sort, with the stem spirally twisted to render it more portable, and less liable to accident.

Another invention of the Florentine academicians to indicate changes of temperature may here be noticed. It consisted of hermetically sealed spherules of glass, of different specific gravities, introduced into a wide tube filled with pure spirit. The degree of the Florentine thermometer at which each sank, was noted, and by hanging this instrument in an apartment, it showed somewhat the variations of the temperature of the surrounding air, though slowly. Imperfect as these attempts were, they paved the way to very important improvements in themselves.

The indefatigable Boyle appears early to have turned his attention to the improvement of the thermometer, and his first attempts were on the air thermometer, or the weather glass as it was then styled. He rendered the instrument more convenient, by making one reservoir for the liquid and for the air at the bottom of the tube; and thus the thermometer might be conveniently dipped in fluid, or applied to any body for ascertaining its temperature. "The thermometer," he says, "being made by the insertion of a cylindrical pipe of glass (open at both ends) into a phial or bottle, and by exactly stopping with sealing wax, or very close cement, the mouth of the phial—that the included air may have no communication with the external but by the newly mentioned pipe." If a portion of any liquid be added sufficient to cover the lower extremity of the pipe to be contained in the bottle, it is obvious, that the expansion of the enclosed air will elevate the included liquid in the cylindrical pipe; and this liquid will again descend on the construction of the enclosed.

Boyle likewise showed that no dependence could be placed on the indications of open air thermometers, under different degrees of atmospheric pressure, and he states that on plunging the bulbs of different thermometersin liquids of very different specific gravities as mercury and water, the liquor in the stem stood at unequal heights, though both had been long exposed to the same temperature.

(To be Continued.)

The Siamese Twins.

Dr. Warren, of Boston, lately communicated the following among other interesting particulars in regard to the Siamese twins:—

The connecting substance is very strong, and has no great sensibility; it can be severely handled without causing pain. No pulsating vessel can be felt in it.—The slightest motion of one is immediately followed by the other in the same direction, so that the same wish seems to influence both; this is quite involuntary, or a habit formed by necessity. They always face in one direction, standing nearly side by side, and cannot without inconvenience face in opposition directions.—One is rather more intellectual, being rather irritable, the other being extremely amiable.

The connection between these twins might afford some very interesting observations in physiology, therapeutics, and pathology. There is doubtless a connection by minute blood vessels, absorbents, and nervous filaments, which might transmit the action of medicines and the causes of disease. As far as known, any indisposition of one extends to the other; they are inclined to sleep and eat at the same time and in the same quantity, and perform in the same manner other similar acts. It is supposed that when they are asleep, touching one awakens both, but when awake, an impulse given to one does not affect the other. The slightest movement of one is soon perceived by the other, that a careless observer might think they acted simultaneously. No part seems to have a perception common to both, except the middle of the connecting substance, and its neighborhood, for when an impression is made at this part, it is felt by both, while beyond this space it is felt only by the one of the side to which it is applied.

From the limited vascular nervous connection that can be discovered, Dr. Warren supposes that the influence of medicine, transmitted from one to the other, would be inconsiderable; and the same would apply to most diseases—for instance, a slight fever would not probably extend from one to the other; while diseases, communicable through the absorbents or capillaries, (as small pox) would be readily transmitted. The beatings of both hearts coincide exactly, as also the pulses under ordinary circumstances: if one exerts himself without the other, his pulse alone will be quickened, while the latter is unchanged. They breathe exactly together.

This harmony in coporeal functions would lead us to ask if there be a similar harmony in the intellectual functions; if they are indentically the same persons. There is no reason to suppose that their intellectual operations are any more the same than they would be in any two persons, confined together, educated under similar circumstances, and with similar habits and tastes.

Then would come the question whether they could be separated with safety. Perhaps such an operation would not be necessarily fatal, but the peritoneum may be continuous from one to the other, and the opening of this great serious cavity might be attended with dangerous symptoms. Should one die before the other, it should be immediately performed, but no surgeon would be justified in attempting such an operation to free them from a mere inconvenience; which inconvenience, if we may believe the reports of their domestic affairs and flourishing condition in worldly goods, is after all of no great consequence.

The Honey Bird.

Mr. Cumming the author of "Five years of a Hunter's life in the Interior of Southern Africa," gives an account of this bird, which invites attention by unceasing chirpings and hummings, and then invariably leads the hunter to a wild bee's nest, on reaching which it hovers above the nest, pointing with its bill, and takes up its position in a neighboring tree, awaiting its share of its honey, which the traveller obtains by stupifying the bees by burning grass at the entrance of their domicile. But sometimes the bird plays tricks, and the pursuit in quest of honey frequently brings the traveller into the presence of a grizzly lion or a crouching panther. Mr. Cumming, when once recreating himself in quail shooting, was lured by a honey bird for a mile through the glades adjoining the Limpudo river, where, instead of finding honey, he was brought face to face with a crocodile of vast size, no part of his body being visible above the water except his head. His glancing eyes were anxiously directed towards eight or ten large bull buffaloes, which, in seeking to quench their thirst in the river, were crackling through the dry reeds as they waded in the deep mud. Fortunately for the buffaloes, the depth of the mud prevented their reaching the stream, and thus the scaly monster was disappointed of his prey.

Old Times.

The Romans of the Empire delighted in the shows of animals. In the days of the Republic Pompey was drawn in triumph by elephants, and Anthony by lions. Aurelian was drawn by deer; Firmus, by ostriches; Heliogabalus was sometimes drawn by four lions, then by four tigers; now by four elephants, then by four mastiffs, not unfrequently by four camels; and once by four naked women! At one time he caused to be collected a thousand rats, at another time a thousand weasels, and at another ten thousand mice, all of which he exhibited to the Roman people. And for the purpose of estimating the magnitude of the city he caused to be collected such a number of spiders as were never collected together before, nor have ever since been seen by human eye. They weighed upwards of ten thousand pounds! He would also give most curious presents to those he called his friends. Ten bears to one; ten crickets to another; to some ten camels; to others ten flies; ten ostriches; and ten pelican's eggs. To some, dead dogs; to others, dead bulls; and to some vessels full of worms, of frogs, of toads, of serpents or of scorpions; and frequently at his feasts he would introduce bears and pards, lions and panthers deprived of their teeth and claws.

A Gigantic Statue.

A Frankfort journal states that the colossal statue of Bavaria, by Schwanthaler, which is to be placed on the hill of Scudding, surpasses in its gigantic proportions all the works of the moderns. It will have to be removed in pieces from the foundry where it is cast, to its place of destination, and each piece will require sixteen horses to draw it. The great toes are each a half a metre in length. In the head two persons could dance a polka very conveniently, while the nose might lodge the musician. The thickness of the robe—which forms a rich drapery descending to the ankles—is about six inches, and its circumference at the bottom is about two hundred metres. The crown of Victoria, which the figure holds in her hands, weighs one hundred quintals. A quintal is a hundred weight.)

A New Way to Puzzle Rogues

In the genuine notes of the State Bank of Ohio, there are as many figures represented, as the bill is worth dollars. If the counterfeiter wishes to alter the small bills to large ones, as a $1, to $100, they would have to put in ninety-nine human figures—a thing not quite so easily accomplished.

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New Inventions.

Coating Iron with Copper.

To coat iron with copper, as well as it has long been done by tin, has occupied the attention of many inventors for centuries. Their labors have uniformly failed of success. They have produced a mechanical union between the copper and tin, such as by the electrotype process, but for all truly useful purposes no good result was produced; no coppering of the iron by a chemical union was ever accomplished until within a short period, and a knowledge of this discovery has been known to but a very few. The discoverer is Mr. Pomeroy, of Covi gton, Ky., who secured, after no little trouble, a patent for the same on the 8th of last January, and his claim will be found in our list of patents for that week. We have seen samples of plate iron, (one of which is in our office), coppered and finished by Mr. Pomeroy's process. Unless the edge of the plate was seen, no one could tell that it was anything but a copper plate. The application of this discovery to the coating of iron, so as to make it more durable, and render its application to various branches of art more expansive, makes it one of the most valuable discoveries of this or any other age. The iron can be coated with any thickness of copper, and spikes for ship-building have been tested as we have been told, and found to answer as well as those made entirely of copper. As a matter of economy, then, this discovery will greatly cheapen the price of sailing vessels. For boilers, roofing, coating of pipes, covering iron with the precious metals, harness plating, &c., this discovery is singularly applicable, and will be the means of increasing the general comforts of the human race.

New Artificial Leech and Cupping Tube.

Dr. Charles Rodgers, a noted inventor, of Jefferson, Wisconsin, has invented a most ingenious little instrument as a substitute for the common cupping process, and as an artificial leech. In the first place the infected part of the patient, or on whatever part on which it is designed to operate, is perforated in one or more places by a lancet, impelled in a tube by blowing it like a Guinea arrow with the mouth. The artificial leech consists of a glass tube, which is set upon the wound, and by a small metal tube at the other end, all the air is exhausted, when the blood, &c., rises in the vacuum, and communication is then cut off from the atmosphere by an ingenious slide valve, which stops the mouth of the small metal tube. This invention is a neat improvement in the art of surgery. Measures have been taken to secure a patent.

Improved Granite Lifting Wedge.

Mr. Nathaniel J. Wyeth, of Cambridge, Mass., has invented a new wedge for inserting into the hole drilled in a block of granite, to be lifted by the crane or derrick. This wedge differs from those in use: it is more simple and easier managed. The hole to receive it has only to be drilled straight and the first thing inserted is a bolt with a ring for its head.—This bolt is made with flat upper sides to receive a spring clamping skiver, which is pushed down over it, and which binds the tighter in the stone, according as it may be drawn upwards. Measures have been taken to secure a patent.

New Brick Machine.

Mr. I. Z. A. Wagner, of Philadelphia, has invented a new rotary brick machine, which has been pronounced a great improvement over those now in use. We will be able to present an engraving of this machine in a few weeks.

Scientific Association.

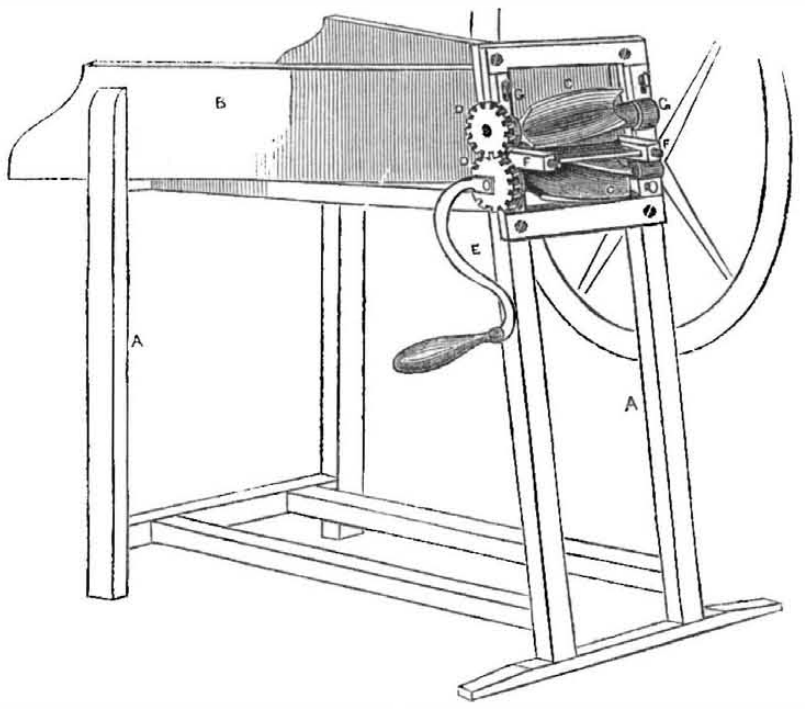
We intend to present the proceedings of the American Scientific Association in two more numbers, and we will give an abstract of the proceedings of the British Scientific Association in the beginning of our next Volume. The proceedings of these Associations are of unusual interest and importance.

The celebrated Liebig is about to visit the United States, for the purpose of lecturing on chemistry.

Self-Lifting Water-Wheel.

Messrs. John W. Kennedy & Ephraim Prentiss, of Plainfield, Conn., have invented and taken measures to secure by patent, what have been considered very valuable improvements in building a water-wheel frame in such a manner that it will lift itself above all backwater in the most simple manner. The frame is made with permanent screw-jacks in it, which can be geared at once with the driving pinion, and which, when set in motion, gradually elevates the wheel and its bearing frame above back water. The shoot and all the gearing is arranged in a very ingenious manner to move along with the frame, but still to connect with the branch gearing, without putting a tool in requisition for that purpose, or using a wrench to screw or unscrew a bolt.

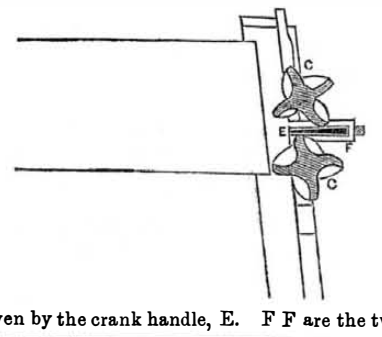
NEW STRAW CUTTER.--Fig. 1.



This machine is the invention of Mr. A. S. Macomber, of Burlington, Vt., who has taken measures to secure it by patent. The principle of the operation is the employment of a central stationary knife or cutter acted upon both above and below by two spiral bladed rollers, which feed in the straw, &c., to the knife and act upon it to cut it, partly on the principle of scissors.

Figure 1 is a perspective view, and fig. 2 is a longitudinal section, showing the action of the spiral rollers upon the inclined knife. A is the frame; B is the feed-box; C C are the two spiral bladed rollers, which are geared together by the cog-wheels, D D, which are driven by the crank handle, E. F F are the two side stocks to receive the knife or cutter, E (fig. 2.) The stocks of the knife are regulated by set screws to set it in its true position between the spiral rollers, so as to have the tangent described on one spiral blade by the knife opposite to the space between two spiral blades of the other, thus allowing the straw, &c., to be cut on both sides—above and below alternately. G G are movable bearings of the upper roller to set it at any required distance from the other to set them truly with the knife in the proper position for correct cutting. This machine is very simple. The spiral rollers may be said to embrace the character of feed and cutting rolls. They are made of cast iron, therefore they are not expensive. The knife is made of steel, and is not, as might be supposed, liable to be dulled by the action of the metal rolls upon it, on the contrary they act like a steel upon a knife, and in practice tend to keep the knife sharp. This is the information we have received respecting its action. Its simplicity at least, and the small expense of its construction, together with no parts that are obvious to us as liable to break; induces us to call the particular attention of our farmers and others interested, to it. More information may be obtained by letters addressed to Mr. Macomber.

FIG. 2.



Foreign Scientific Memoranda.

GOLD AND SILVER GLASS.

A new method of manufacturing ornamental glass has lately been discovered, which presents the brilliant appearance of highly polished gold and silver. This mode of "silvering" glass is a new invention, which is now being carried on by a company in London. The various articles are blown of two different thicknesses of glass throughout, and the silver is deposited upon the two interior surfaces of the double hollow glass vessel. The silver is deposited from a solution of that metal by the reducing agency of saccharine solutions; in short, the process is entirely a chemical one. The double hollow vessels are hermetically sealed, and thus the silver deposit is protected from wear and from atmospheric influences. The brilliant silver deposit being seen through the colored glass, communicates to that substance, in a curiously illusive manner, the appearence of being entirely formed of gold and silver itself. When the glass is cut, the brilliancy of the silver is heightened; and, on the other hand, when the glass is ground, the effect of frosted silver is produced. By staining, and the employment of variously-colored glasses, the effect is modified in a variety of ways; thus, with certain yellow glasses, the effect of gold is produced; with deep and ruby glass, colored metalic lustres, equal in the effect to the plumage of birds, are obtained. As every form into which glass can be blown is silvered with facility, the extent to which this beautiful invention can be carried is perfectly unlimited. The new process extends to flower vases, chimney ornaments, and in fact, to every article usually made of glass. For ornaments it presents all the lustrous brilliancy of highly polished gold and silver, at a great reduction of cost, and for imitating jewelry and illuminations it will far surpass anything known. In fact, the invention is at present quite in its infancy, and promises soon to fill the houses of the middle classes, usually destitute of brilliant ornaments, with cheap articles presenting all the striking appearance of costly plate &c.

PREVENTION OF SPONTANEOUS COMBUSTION.

An exhibition of a novel and ingenious kind took place last month in the Underwriters' room, in the presence of a number of shipowners, merchants and others, the object was to show how a fire may be made to destroy itself. The apparatus which is of the most simple and expensive kind, being adjusted, and its mode of action explained, the ignition of some cotton in a corner of the room was immediately detected by one of the indices, which was as instantaneously responded to by the exterminator. This self-acting apparatus we shall not pretend to describe; but from its simplicity, cheapness, and unerring certanty, we make no doubt it will come into general use. Unlike many scientific men who lock up their inventions until they get a certain remuneration for them, the ingenious inventor, Dr. Robinson, of London, has generously thrown this open to the public for their use, and, as he said on the occasion, with the hope that it may be the means of preserving property and valuable lives.

MARVELLOUS TELEGRAPHING.

A french paper, the Presse, gives some account of the experiments made with a new telegraph dictionary, the invention of M. Gonon. Despatches in French, English, Portuguese, Russain, and Latin, including proper names of men places, and also figures, were transmitted and translated, says this account, with rapidity and fidelity alike marvellous, by an officer who knew nothing of any one of the languages used except his own. Dots, commas, accents, and breaks were all in their places. This dictionary of M. Gonon is applicable alike to electric and ærial telegraphy, to transmissions by night and day, to maritine and military telegraphing-

[This looks like a French *faggot*.]

IRON SHIPS OF WAR

A Mr. Walter, R. N., has now proposed to the Lords of the Admiralty a plan by which all the defects of iron war steamers will be remedied, and which the gallant Admiral Sir Chas. Napier has lately so alarmingly pointed out. Mr. Walter proposes, by lining the ships throughout between the angle-iron with his composition, to make them perfectly safe. He says it will, 1st. Retain the splinters made by shot, 2d. Close the holes and prevent the water entering. 3d. Prevent concussion, and thereby the rivetted heads from being knocked off. 4th. Prevent corrosion of the iron by the adhesive material to be applied. 5th. Prevent the effects of heat in warm climates. 6th. From its elasticity, it will yield to the workings of the ship, and keep her tight and dry. 7th. From its being a non-conductor, it will remove the present difficulties with regard to the compasses. 8th. And it can always be reformed and transferred to another ship. The composition has passed the ordeal of 32-pounders at Woolwich, and is now to be tested by the guns of the Excellent at Portsmouth.

IMPROVEMENT IN THE METHOD OF LOWERING SHIPS' BOATS.

A model, showing a simple, but very important improvement in the method of lowering ships' boats into the water, in case of accident, has been exhibited during the last month. It is the invention of Mr. Charles Grayson, ship builder. The improvement consists in both ends of the falls, or ropes, being brought through the rail to a central winch-barrel, by which one man only, instead of two, is required to lower the boat, which necessarily descends fairly into the water.

BALLOON ASCENT.

Mr. Green, the celebrated æronaut, made a balloon ascent from the Vauxhall Gardens on horseback, on the 31st of July. His horse, however was only a small pony, weighing 200 lbs., and its feet were strapped together to prevent plunging. An immense concourse of people had assembled to witness the feat, but all were greatly disappointed by the diminutive size of the animal and the precautions taken to prevent the free use of its limbs. The exhibition did not compare with that of Parisian ascent.

[It takes the French to do their jobs grandly. Victor Vardale went up head downwards—he was a Frank.

The Duke of Sutherland, in Scotland, is carrying on the Irish system of evicting his tenants; he should be tied to a plank and sent adrift to the Mælstrom.

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Scientific American

NEW YORK, AUGUST 31, 1850.

Improvements in Railroad Travelling.

So far as ease and comfort are concerned, travelling by steamboat is altogether superior to railway locomotion. There are some things, however, about railroads, which incline us to give them the preference. The majority of steamboats have generally been and are managed to give the public a very unfavorable opinion of the amount of honesty engaged in their management. The fares between two different places, are generally regulated by a sliding scale of such rapid and extensive variation, that it is not easy to tell what may be to-morrow from what is to-day. Railways are managed by single companies, whose charges are uniform from one ond of the year to the other, and not like the steamboats,—"fickle as the winds, the water, or the weather." The trickery of changeable fares in steamboats have enlisted the feelings of thousands in favor of railways, who otherwise would prefer the steamboat. In the steamboat, passengers can sit, walk, talk, read, sleep and enjoy the cool and refreshing breeze which comes rippling over the dancing waters. In the railroad car they are crowded, shaken, smoked and baken,—ease and comfort are out of the question. But who does not like rapidity in travel? And who would not sacrifice a few hours of ease for the saving of a few hours of time? We never commence a journey, however rapid the conveyance, but the time appears to hang heavy until it is over. There is something exhiliarating in dashing along the railroad at the rate of thirty miles per hour, in comparison with the steamboat running at the rate of fifteen. The great mass prefer to travel as fast as they can,—they like to be at the end of their journey as soon as possible. Railway passenger traffic will therefore increase, while steamboat interior travel will decrease. The comfort and safety of passengers on railways should therefore engage at all times, the attention of railway companies. On the engines there seems to be less room for improvement than on the tracks—the laying of the rails. On many roads these are laid down in a very slovenly manner, and when travelling over them at the rate of twenty-five miles per hour, they give a person, by the jolting and heaving operation which he undergoes, a very good idea of a storm at sea in miniature. To increase the comfort of railway travelling, there is much yet to be done. We have some good railroads, but we might name not a few which are disgraceful to their companies.

There is one great improvement, viz., getting rid of coal smoke and dust on railways, to which special attention should be directed. The atmosphere of a railroad car contains a great amount of carbonic acid which comes direct from the locomotive. Sparks also, in spite of many different kinds of spark arrestors, not unfrequently, but quite commonly, come whisking into the cars in disgraceful showers, without respect to judge or jury.

We hope that the anthracite burning locomotive will soon supersede the wood burning one, or that coke will be made so as to supersede economically the use of either wood or hard coal.

Good solid tracks, and the absence of smoke and sparks, would add fifty per cent. to the comforts of railway travelling. Some of our roads need no reform in the first case, but assuredly all do, the latter evil.

Mechanics' Fair.

The Massachusetts Charitable Mechanics Association will hold their Annual Exhibition of American Manufactures from the 16th to the 20th of September, in Boston. J. S. Skinner, Esq., Editor of "The Plow, the Loom, and the Anvil," is to deliver the Annual Address.

Among the memoirs recorded at a recent meeting of the Paris Academy of Sciences, was one on a method of rendering birds auxiliary to the direction of balloons.

Agricultural Machinery

We have seen the model of a new reaping machine, invented by Mr. Blaikie, of the firm of Blaikie and Cameron, Stockwell Street, which, when brought into full operation, bids fair to surpersede the old reaping-hook completely. Like nearly all effective discoveries, its principle is simple. Two steel blades, perfectly sharpened, meet at a certain angle in front of something like a carriage break for horses. In the centre of this carriage there is a seat for the director of this machine, who, by a simple apparatus, turns the blades in any direction he pleases. To avoid contact with uneven ground, a small turn upward, like the toe of a skate, finishes the blades; so that, meeting a rock or indurated soil, the cutter passes over, and instantly falls into place again. The whole is put in motion by a horse, which pushes from behind, but does not draw as in the plow or harrow. The model we saw has been tried on rushes, grass, and several other materials of that sort, and answers the purpose exceedingly well. In the corn or hay field its value is evident; for, besides cutting down, it is so constructed that it "lays over" as cleanly as the scythe or the hand with the hook, and it cuts such a quantity as would puzzle half-a-dozen hard working men to encounter in a similar time. The principle is obviously good; and, to our notion, it only requires a fair trial in application to have it ranked at its full value.

[The above is taken from the "Glasgow Daily Mail," (Scotland.) We extract it to make a few remarks thereon. We believe the Americans are ahead of all other nations for variety in agricultural implements. The price of manual labor is so high that ingenuity has been taxed to the utmost in inventing machinery to save paying for manual toil. How numerous are our churns, rakes, plows, horse-power, grain separators, cultivators, &c., and we have not a few reaping machines. In Great Britain all the grain is reaped with the sickle. In the harvest season it is no uncommon thing to see three hundred men and women reaping in one field. The majority of these are Irish, who come to England and the east of Scotland, just to reap during the harvest. Their wages are about 62½ cents per day, and board—not so bad pay, but the labor is very severe. In America no such system could be carried out, for labor is both scarce and high, according to the price of agricultural products; it is therefore for the American farmer's interests to have as many labor saving machines as possible, and those of the very best quality. They should be strong, simple, and easily repaired. We have seen a great number of agricultural implements on which a great deal of ingenuity was expended, but which, from their very complexity, we could not but condemn. It is no easy matter for a farmer who lives some distance from a machine shop, to go and get a broken instrument repaired. He therefore should have duplicates of the various breakable parts always on hand, to replace at once a broken one.—Supposing a farmer is threshing his grain, and one of the wheels of the machine should break, and not another within a mile to replace it, why he would lose two or three dollars, taking all things into consideration, for his neglect. We have seen some farmers great upon making a little show, with a fine carriage and harness, and who had only one plow, a poor harrow, and but a scanty share of other implements. In every case this is poor policy; good stock in cattle and the best of agricultural implements, are signs of wisdom, thrift and comfort. The farmer who neglects these things sows his own thistles. Every farmer should have a machine house in which to keep his implements under cover, when not in use. All tools should be kept clean and free from moisture. The plow should always have a bright shear and mould board, and these should be greased when laid up for winter. The farmer who has a small stream of water to drive a wheel of a few horse power near his house, should employ it for that purpose: it might saw his wood, churn, thresh, and perform a great number of operations. Every farmer should at least have a good horse-power to saw his wood, churn, shell corn, &c. Improvements in machinery, and the application of it as a substitute for a manual labor in the useful arts, has been the means of conferring untold benefits upon all classes, and upon none more than the agricultural. Gilbert Burns, the brother of the poet, expressed himself once in respect to the "threshing machine" as follows: "it has raised the rural peasantry of Scotland from serfs, in the drudgery of a disagreeable labor, to men;" and we can safely say the same thing of other kinds of machinery; and that farmer exhibits the greatest amount of good sense who studiously endeavors to lessen the manual toil of himself and his family, by the employment of good machinery as a substitute, in every case where it is possible to apply it.

Ocean Encroachments.

In 1806 the old Atlantic House, at Cape May, was 334 feet from the sea. In 1829 the bank was washed away up to the house, which had to be moved back; thus the sea gained on the land 13·2 inches on an average every year. In 1847 about 40 feet was washed away, which so alarmed—as well it might—those holding property on the bank as to compel them to plant a double row of stakes below the bank and fill it in with brushwood and litter. This has prevented the water from undermining the bank, and not a foot of it has been washed away since then. This hint should not be overlooked by those who have property on disintegrating banks of seas, lakes and rivers. Opposite the city of Albany, in Greenbush, on the Hudson river, there is a continual washing away of a portion of the bank. At a great expense a portion of it has been faced with a water wall, but still there is some of it exposed. A double row of stakes every five years, (if required even in that time) will preserve the bank and save the valuable property behind it. If not carefully protected, portions of water banks subject to disintegration by the water, are liable to receive more damage at one time than another, like the great crevasse which occurred last spring at New Orleans. The only way to prevent such occurrences is to be prepared for them. If the people at Cape Island had sunk their simple breakwater of double piles, brush, stones and clay, in 1806, the old Atlantic House would still be standing as it stood of yore, and more than 300 feet of valuable land along the bank would have been saved.

A Tall Chimney.

The New England Glass Company, at East Cambridge, have erected a chimney 230 feet high. Its form is octagon, of brick, with a massive granite foundation of 36 feet in diameter. The base of the brick work is 25 feet diameter, and the top 13 feet. There is a chimney within a chimney, the entire distance of seven feet diameter. Three horizontal flues, from the furnaces, are carried in beneath to the perpendicular one, though so constucted that additional flues, if necessary, may be added. Thus, through the one gigantic cone, all the smoke from the several furnaces of the establishment may be carried, which will render the group of smaller ones useless, and therefore be demolished. By this grand project, East Cambridge will be relieved entirely of the smoke from the glass-houses, "a consummation devoutly to be wished." This structure has been erected under the superintendence of Mr. Wm. H. Pratt, of Boston, who has accomplished his great task in the most substantial and satisfactory manner. He informs us that 800,000 bricks, and one hundred cubic yards of granite were required in its erection.

The Great Case of the Parker Water Wheel

This case, which has been on trial for a long time, was decided last Monday. After a long period of argument and much consideration, the injunctions asked for upon the ground of violation of the patent for Parker's water wheel were refused. Judge Grier, of the United States Circuit Court, delivered the opinion of the Court to that effect. There were sixty cases depending on this decision.

For Complainant—Titus, Cadwalader and St. G. Campbell. For Respondent—Mallery, Penrose, and Wm. W. Hubbell.

Improvements in the Scientific American.

The publishers of the Scientific American respectfully inform their patrons, that they have matured their arrangements for the next volume, designing it to be the best of all the preceding five. They have contracted with a paper manufacturer for a superior and heavier kind of paper, on which it shall be printed. Our patrons will therefore have a handsomer paper than volume 5, and one more valuable, also, in respect to matter and illustration.—The publishers are happy to inform their patrons that they have employed an able correspondent, who is now dispatched to Europe, and who will correspond exclusively for the Scientific American during the Great Industrial Exhibition to be held in London next May. The said correspondent will communicate with the Scientific American semi-monthly, from the first of next December until May, 1851, and then he will correspond weekly. Thus we will be enabled to lay before our readers a clear review of the machinery, &c., displayed there by the inhabitants of every nation in the world. It is the design of the publishers to keep the Scientific American in advance, as heretofore, of all other publications, in all that concerns inventions in machinery, discoveries in chemistry, &c., and it will furnish the clearest and most useful articles in every department of science and art, from the boiling of a tea-kettle to the operations of the most ponderous and complicated engines which guide the spindle and direct the loom. The discussion of party, political and religious questions, are foreign to our objects; our course is to treat of science and art, and to labor for this advancement and promulgation (so far as we are able), from one end of the earth to the other.

The Scientfic American has always received a firm support from all classes, and has uniformly been respected for its impartiality and soundness; the publishers therefore place a firm reliance upon the public for future encouragement.

Advice to Correspondents.

When you write, be sure to place both the name of the place where you reside, and the State, either at the top or end of your letter. Do not write too long a letter, nor a hasty one. Write clear, and carefully, without many flourishes. Do not write on any vain and unreasonable subject, and always be reasonable yourself. If your letters are plain, reasonable, and not too long, they will always be treated with respect. Those who write to us about patent claims should state the date of the patent, and give the name of the patentee. Any useful information communicated, is received with pleasure. We receive many communications from men who have received a good education, but who from carelessness do not take the laconic trouble of condensing their ideas—such communications we are not able to publish.

Patent Case.

In next week's number we shall publish the able opinion of Judge Grier in the case of Blanchard vs. Reeves and others, delivered on the 8th of August. The report was prepared by our Philadelphia correspondent, and has never before appeared. It is quite important, and our readers may expect a feast of scientific reason rarely met with.

Telegraph Extension.

The St. Louis Reveille says it is probable that before the winter sets in, it will receive its news from the plains, Santa Fe, the mountains, &c., by telegraph from Independence. It appears that Messrs. Schaffner and Veitch have met with all the necessary encouragement along the route, and are now actively engaged in pushing the work to completion.

Notice.

We have some very interesting communication, which are necessarily delayed until next week.

There was frost at Bethlehem, N. Y., on the night of the 15th inst. The weather during the preceding three days was cold enough for fire.

[We sat by one of the fires—comfortable it was.]

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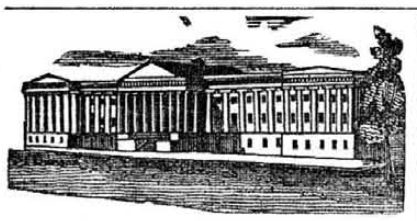

☞Reported expressly for the Scientific American, from the Patent Office Records.]

LIST OF PATENT CLAIMS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending August 20, 1850.

To T. Batty, of New York, N. Y., for improved Serving Mallets.

I claim, first, attaching friction rollers to the periphery of a serving mallet, substantially in the manner and for the purposes herein described.

Second, Making the groove or face deeper or larger at the part H, which fits the served part of the rope, in the manner and for the purpose substantially as herein described.

To Robt. Brown, of New London, Conn., for improvements in Gun Harpoons and Lances.

I claim attaching a tail of cords, or their equivalent, to gun lances, substantially in the manner and for the purpose herein set forth.

I also claim attaching the button to the shank of gun-harpoons or lances in such manner that when the lance or harpoon is discharged from the gun the button will drop off, being thereby prevented from retarding the flight and from deflecting the lance or harpoon from the line in which it is projected from the gun, substantially as described.

To F. H. Chase, of Clintonville, and A. Weston & Leander Babbit, of Ausable, N. Y., for improvement in Obstetrical Supporters.

We claim the combination in the manner described of the sliding plate, with the back pad, which is connected to the seat, for the purpose of enabling the bearing of the instrument to be moved higher up or lower down the back, without disturbing the patient.

To J. Dougherty, of Mount Union, Pa., for method of propelling beats in shallow water.

We claim, first, the combination and arrangement of the setting pole, sliding in the sheath, with the spring bolt and cords, for the purpose of shortening or lengthening the setting pole, substantially as herein fully described and shown.

Second, the manner herein described of checking or snubbing the boat by means of a chain or cord attached to the foot of the setting pole and passing over pulleys to a windlass placed in the stern of the boat near to the helm, as herein described.

To Imla Drake, of Mansfield, N. J., for improvement in compound wagon-boxes.

I claim making the fastenings of a compound wagon body by combining with screw-bolts so jointed to the axles, frame or body of the carriage as to be laid down, or set up at pleasure, two cross pieces to each pair of bolts, with pressure nuts above the upper, and sustaining nuts beneath the lower cross bar, whereby the whole load may readily and easily be secured, or the lower part may be released and withdrawn, without disturbing that which is above it, substantially as herein set forth.

To R. E. Dibble, of New York, N. Y., for improved Steam Boiler.

I claim the arrangement of pendent water vessels in the fire box, in connection with water tubes, which pass along the flue and are connected at one extremity with a water space near the back of the boiler and at the other with the water vessels at the fire box substantially as herein set forth.

To I. D. Garlick, of Lyons, N. Y., for improvement in changing rotary motion into reciprocating motion.

I claim the mechanical arrangement and combination of parts, by which I convert the rotary motion of the wheel into a reciprocating movement of the churn dasher rod, to wit, by means of the action of the lugs that project from the face of the said wheel upon the forked rocker, and the vibrating when aided by the inclined planes, substantially in the manner herein set forth.

To J. L. Hardeman, of Arrow Rock, Mo., for improvement in machines for cutting hemp.

I claim a series of blades upon an arm back to back in a V form their edges elevated in order to give a smooth glancing stroke upward through the stalk of hemp after the manner of cutting performed by the common scythe in hemp or grain.

I claim the introduction and use of a cleaning shear over the crotchet or junction of the blades (to remove such hemp as may be imperfectly cut or pulled up), substantially in the manner as herein set forth.

I claim the method of separating and bunching the hemp after it has been cut, by means of a wedge or inclined plane and a revolving cone.

I claim the invention and use of the revolving rack as a substitute for the over-head reel supporting the hemp while being cut.

To J. C. Millar, of Springfield, Mass., for improvement in Fulling Mills.

I claim so arranging a vertical fluted or ribbed concave that the rotation of the former on its axis shall cause the goods to be fulled to assume a cylindrical form and to rotate on its own axis by means of the friction of the two fluted or ribbed surfaces acting upon and sustaining in its position the cloth or goods, as set forth.

To L. V. Newton, of New York, N. Y., for improvement in preparing the face of metallic types, engraved plates, &c.

I claim the plating or coating of the surfaces of metallic printing types, stereotype plates or other printing plates whether cast or engraved, with an additional coat of metal by means of galvanic electricity in the manner and for the purpose described.

To George Pollock, of Roxbury, Mass., for improvement in hot-air Registers.

I claim the method of moving the dampers in registers or ventilators, by means of the slider and the oblique bars, with their several forms and parts, substantially as described, in combination with the oblong dampers hung in the middle of their width, in the manner and for the purposes set forth.

To J. D. Rice, of Philadelphia, Pa., for Register for steam boilers.

I claim connecting the gauge rods with the gauge cocks in such manner as herein described, that the pressure of steam and height of water shall be registered each time the gauge cocks are tried, the register indicating at the same time the period of time of trying of the gauge cocks by opening and closing them.

To S. P. Ruggles, of Boston, Mass., for machine for cutting sheet metal, &c.

I claim the toothed rack or its equivalent, applied to the bar, and a system of one or more gears, or the mechanical equivalents thereof (applied to the cutter wheel and made to engage with the said rack or equivalents therefor) in combination with the said bar, the cutter wheel and its sliding carriage; the same being substantially in the manner as above described, and for the purpose of causing the cutting periphery of the rotating knife to travel around faster than the knife moves horizontally, and to thereby make said knife cut with a drawing stroke.

I also claim the combination of the swinging frame and gauge contrivance or equivalents therefor, with a slidding carriage, its cutter wheel and the slide bar and straight cutting edge, as substantially specified, the same being for the purpose of enabling me to cut either circular or concave work, as described, and of any diameter or dimensions capable of being produced by the machine of whatever size it may be made.

To George Tingle, of New York, N. Y., for improved opening and closing bucket for paddle-wheels.

I claim, first, the formation of each of the blades composing the bucket, so that their inner or closing ends shall be heavier than the outer ends thereof when combined with a stop or stops, substantialy as herein described, thus effecting the closing together of the same by the action of gravity before entering the water, as set forth.

Secondly, I claim curving the inner edges so as to insure the closing of said edges, together by the action of the water while backing, and thus complete a sufficient bucket for that purpose, substantially in the manner described herein.

To John Van Brocklin, of Middleport, N. Y., for improvements in machines for heading bolts, rivets, &c.

I am aware that spikes and bolts have been headed in a box, I therefore do not claim the box with the movable header therein, but I claim forming in the lower part of the box or holder a flaring or bell mouthed cavity, which embraces the tapered ends of the dies, when the box is down or in a vertical position, and clamps them firmly together, while at the same time time the cavity acts as a guide to cause the heading box to assume its proper position, and prevents the metal from being forced out between the ends of the dies and bottom of the cavity in the box during the operation of heading.

To J. A. Winslow, of Roxbury, Mass., for improved method of carrying vessels over shoals.

I claim the mode of transporting a vessel across shoals or bars, by means of a camel, having an unyielding platform for the vessel to rest on, and likewise provided with a bow, as herein described, the vessel being partly water borne and partly supported by the camel.

To James Young, of Manchester, England, for improvement in processes for making stannates of potash or Soda. Patented in England Dec. 9, 1848.

I claim the mode of producing a stannate of soda by heating a mixture of tin ore and sulphuret of sodium, and a stannate of potash by heating a mixture of tin ore and sulphuret of potassium and afterwards separating the sulphur from these mixtures respectively, by means of a metallic oxide, in manner herein before described.

To Wm. R. Nevins, of New York, N. Y., for improvement in machines for cutting crackers.

I claim the combination of the three following elements: first, the constant velocity of the breaking rollers.

Second, the number of strokes of the cutters adjustable thereto, by means substantially as described, so that within certain limits they may be varied in relation to the number of revolutions of the feed rollers.

Third, an adjustable feed to the apron derived from the shaft carrying the cutters, so that it always makes the same number of strokes, but each stroke may be varied in length, by which, in the same machine, I am enabled to cut crackers of any given size.

[To show how things are managed in the Patent Office, and the competency of the officers employed therein, we will state that this claim of Mr. Nevins is not the one first set up by him, *they* were rejected, and "in cabinet council held," the above was made out by the examiner, and the applicant was told it would be granted, and would cover what he wanted. We will now give the old claim, the one set up by Mr. Nevins:

"I claim the employment of the cutters on the secondary shaft, substantially as described, whereby different speeds may be given to the cutters, while the dough rollers receive a uniform speed, for the purpose set forth.

I also claim the secondary cutter shaft Y^2 in combination with the crank M, the connecting rod, L, and rocking shaft E, as described, whereby a progressive intermittant motion is communicated to the endless apron, D, to correspond with the speed of the cutters, however varied the speed of the cutters may be, for different kinds of biscuit, &c., of various sizes."

Now we leave it to any attorney to say which of these claims are the best, and which of them should have been granted. We might lay on the critic's lash with no unsparing hand in this case, but we chose not to do so, lest it might be supposed some personal grudge had prompted us to the attack. What we have said proceeds from no other than an honest motive—we believe the Patent Office has done a great wrong. An engraving of the above machine will be found on page 57, Vol. 3, Sci. Am.

DESIGN.

To Robert Donavan, of Pittsburg, Pa., for design for stoves.

[For notices of the "Serving Mallet," of Mr. Batty, and Capt. Robert Brown's Whale Lance, see Nos. 32 and 39, Scientific American. These inventions are both valuable to nautical men, and should arrest their attention.

A Devoted Naturalist.

Probably one of the most curious examples of the apparently trifling pursuits of scientific men has been exhibited by one of the most esteemed members of the Academy of Science of Paris, M. Dureau de la Malle. He was anxious to ascertain at what hour different birds began their morning song; he, therefore, from the first of May to the 6th of July, made observations, which he regularly published. It appears that for thirty years this vigilant naturalist went to bed at seven o'clock in the evening and rose at midnight, during winter and summer, and that this eccentric habit was for scientific purposes. It seems that the concert is opened by the chaffinch, and the sparrow is the laziest bird, not leaving his nest until five o'clock. In the intermediate hours at marked intervals, which M. de Malle has carefully noted down, other birds commence their natural melody. He has shown, on more than one occasion, that different birds have mistaken artificial light for the dawning of day, and that a solar lamp have awakened the little choristers.

Ostrich Hunting.

A favorite method adopted by the wild Bushman of taking ostrich and other game, is to clothe himself in the bird's skin, in which he stalks about the plain, imitating the gait and motions of the ostrich, until within range, when he seals his fate with a poisoned arrow. These arrows consist of a slender reed with a sharp bone head, thoroughly poisoned. When a Bushman finds an ostrich's nest, and the parent birds away, he ensconces himself in it, and on the return of the old birds secures the pair. By these means are obtained the majority of the plumes which grace the heads of the fashionable world.

Kentucky Tobacco Crop.

From different parts of Kentucky accounts are gloomy as to the growing tobacco crop. In Mason county, the Maysville Eagle says, the amount planted was only about two thirds of last year, owing to the lateness of the planting, and the danger from frost, the yield will not be above two-thirds the usual product per acre; or, in other words, the crop of Mason this year will be about half that of last year.

The Hopkinsville (Ky.) Press says:—"On the subject of the tobacco crop, we have conversed with gentlemen who have visited a great portion of the Green river country, and they assure us that it is utterly impossible that a half crop can be made—indeed, in many cases, the planter will not realize one hundred pounds to the acre."

Boston As It Was.

The peninsula of Boston was originally owned by the Rev. Wm. Blackstone, who resided there alone when it embraced but seven hundred acres. He sold the entire peninsula for thirty pounds sterling, to John Winthrop and company, who founded Boston in 1630. Winthrop and his party, among their first acts, built a rude meeting-house on the south side of State street, founded the First Church, (which then embraced the people of Charlestown,) and settled Rev. Messrs. Williamson and Cotton as teacher and pastor.

Novel Suspension Bridge.—An Army of Monkeys.

There is a story going the rounds of the papers about a suspension bridge being formed by an army of monkeys, taken from Captain Reid's "Adventures in South America." We have never seen the correctness of the story doubted by any paper, and were it not too long for a falsehood we would publish it for a curiosity; but believing it to be a sheer untruth, we merely mention the circumstance to make some people put on their spectacles.

Mineral Paint Discovered in Massachusetts.

A quarry of mineral has been discovered near West Springfield, which consists of a reddish brown stone mixed with blue, which is ground, washed and dried, and then mixed with oil like lead, when it becomes an excellent fire and water-proof paint. It is considered to be a valuable discovery.

The Rice crop in Louisiana promises an abundant harvest.

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TO CORRESPONDENTS.

"A. C., of La."—If a letter be written over with a solution of the sulphate of iron, the writing will be invisible; but if it be afterwards rubbed over by a feather, dipped in a solution of prussiate of potass, it will appear of a beautiful color: it is called sympathetic ink.

"C. A. R., of Miss."—Among the earliest writers upon the subject of physiognomy may be mentioned Aristotle and Admantius. It has since been discussed in connection with craniology by Hudd, Camper, Kent, Porta, Blumenbach, Fowlers, and by Dr. Gall, of Vienna, the originator of the latter. The science is not generally understood, but it is full of interest. Messrs. Fowlers & Wells, of this city, have for sale all the works devoted to the subject.

"J. E , of Ohio."—The lathe you refer to is not suitable for turning bed posts. The work would be too large for the dies used in it.

"J. P. E., of Pa."—We do not know where the apparatus you want can be obtained in Philadelphia. It can be had upon application to W. B. Leonard, 66 Beaver street, this city, agent for the Mattaewan Co.

"J. W. A , of N. H."—Your question is answered in the negative.

"I. C. S., of N. Y."—A patent was granted in 1846, for the device claimed by you. It was noticed in the Commissioner's report for that year.

"J. H. C., of Pa."—The mere application of the machine to the purpose described by you, could not be patented, for the reason that you have invented nothing. If you have so modified it that a substantial novelty is produced, you can patent the improvement. A principle secured by patent, cannot be applied to another purpose by a second party without infringement. You do not claim to have invented any new principle in the machine.

"B. M. of Mass."—We see nothing patentable in your method of making fence. A claim could not be sustained on the principle of screwing the rails into the posts, or the application of springs for holding them in their proper place. Both are devices well known, and their immediate application to this purpose would not become the subject matter of a patent.

"S. C., of Ohio."—You are certainly entitled to a patent on your machine if it is such an improvement as you describe. It is difficult for us to say whether the government would adopt it or not. If it facilitates this branch of their service, they ought to by all means. They are not always ready to encourage the inventor, especially in a matter of decided practical utility. If you have friends clothed with dazzling authority, you might succeed in getting $20,000. This is all Dr. Page got, and really it seems a *small* sum to expend on results of such magnitude as have been presented. How lucky some persons seem to be in making Uncle Sam "shell out."

"R. C. J., of Del."—Caveat papers cannot be withdrawn from the Patent Office, nor undergo any attention after they have been filed. You can send in additional papers, the right to notice expiring at the same time as the original papers.

"A. H., of Pa."—Mr. Humphrey charges $2 for his work upon daguerreotyping. He has left a few copies with us to sell, which can be sent by mail.

"G. L. F. B., of Me."—We do not believe a patent could be secured, because rollers are now used for lessening the friction of running chains, and every body has a right to use them for that purpose, if they choose, no matter what the chain may be used for.

"A. D. B. of Geo."—Your two letters have come to hand. The engravings are in progress—but they will not be ready in time to return by Mr. Hutchings.

"J. S. of Phila."—The model and funds referred to came safe—and the business will come up very soon.

"G. W. B. of Phila."—We cannot see how a patent could be refused for your discovery' for certainly it is both *new* and *useful*. Specimens of the iron made without and with your process must be sent to the patent office if you apply for a patent.

"H. L. E. of Pa."—Your statement is all correct; the notice was put in probably by mistake, when we are sending five or six thousand at one time.

"J. H. C. of Ill."—There is a Meat Safe patented, named "Kepharts." Your composition is good and has long been known and used. You could not get a patent and you don't infringe on any.

"R. B. of Vt."—Your improvement we believe is patentable. The first thing to be done in making application for a patent, is to get a neat small model to show the invention. From this the drawings and specification will be made by us.

"J. C. B., of N. H."—Masons and carpenters are not dedominated laborers, though they *labor*. Three weeks ago we could have given you all the information you desire. If you direct a letter "Chief Engineer of the Baltimore and Ohio Railroad," at Baltimore, it will find him.

"T. B., of N. Y."—You will discover by experiment, that all the extra power you may gain, will not counterbalance the extra expense. We don't wish you to go to unnecessary expense.

Money received on account of Patent Office business, since August 22, 1850 :—

E. S., of Me., $30; D. B., of N. Y., $60; A. J. C., of Pa., $ 35; E. A. S., of Mass., $25, and R. A. G., of Pa., $20.

Now is Your Time.

Those desiring to secure Volume 5 but have delayed subscribing, are advised to remit $2 without delay or they. We have a few incomplete sets of Volume 4, containing each about 40 numbers, which will be forwarded by mail on the receipt of one dollar. Those of our subscribers whose term for which they have pre-paid expires with Volume 5, and who design renewing their subscription to Volume 6, will accommodate the publishers by remitting their money before the new Volume commences.

Patent Claims.

Persons desiring the claims of any invention which has been patented within fourteen years can obtain a copy by addressing a letter to this office; stating the name of the patentee, and the year the patent was granted (adding the month of the year when convenient), and enclosing one dollar as fees for copying.

Important Notice to us!

Whenever any of our friends order numbers they have missed—we shall always send them, if we have them onhand. We make this statement to save much time and trouble, to which we are subjected in replying, when the numbers called for cannot be supplied.

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One square of 8 lines, 50 cents for each insertion.
" 12 lines, 75 cts., " "
" 16 lines, $1,00 " "

Advertisements should not exceed 16 lines, and cuts cannot be inserted in connection with them for any price.

PATENT METALIC OIL FOR MACHINERY—Warranted not to gum. Manufactured under Cumberland Brothers patent (April 6th 1849), by C. E. de la Vergne & Co., Elizabethport, N. J. Transparent metalic, adapted to light bearings, spindles, &c., will last a quarter longer than pure sperm. For burning will be found superior. Fluid White Metalic, of the consistance of cream, to be used without wick and tube, adapted to the oiling of engines, shaftings, &c. will last twice as long as pure sperm oil. Hard White Metallic, to be used instead of tallow, will last three times as long; when used in cylinders, the packing must be renewed. Blue Metallic grease, prepared for greasing the inside of boilers when thoroughly cleaned, that the scale which afterwards collects may be removed with one third the usual time and expense. It is also adapted to the greasing of cog wheels; and for the axels of vehicles it has been found to last more than four times as long as any grease ever used for that purpose.
KENNEDY & GELSTON, Sole Agents,
50 3m No. 8 Pine st. New York.

BURR MILL STONES.—We have made arrangements which will enable us to supply all kinds of French Burr, Holland and Esopus Mill Stones of the best material and manufacture, at the lowest prices. Burr Mill Stones made to order and warranted to be of the best quality; Burr Blocks for sale.—Orders addressed to MUNN & CO., post-paid, at this Office, will meet with prompt attention. 41tf

PATENT SELF-ADJUSTING WRENCH. The Subscriber having obtained Letters Patent on his improved Self-adjusting Wrench desirous to sell rights or arrange with some manufacturer to furnish his Wrench to the trade. Address
ADAM HAY, 14 Allen st.,
50 4* Newark, N. J., post-paid.

Patent Office.

128 FULTON ST.

NOTICE TO INVENTORS.—Inventors and others requiring protection by United States Letters Patent, are informed that all business relating to the procuration of letters patent, or filing caveats, is transacted at the Scientific American Office, with the utmost economy and despatch. Drawings of all kinds executed on the most reasonable terms. Messrs. Munn & Co. can be consulted at all times in regard to Patent business, at their office, and such advice rendered as will enable inventors to adopt the safest means for securing their rights.

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WE WOULD remind our numerous friends throughout the country, that we still continue to conduct the business of procuring Letters Patent for new inventions in this and all foreign countries, where the right is recognized. Since making arrangements with those eminent attorneys, Messrs. Barlow, Payne & Parken, Editors of the London Patent Journal, we have secured and managed through them, several foreign applications, with the utmost economy and facility. Inventors and others, desiring advice upon this subject, can correspond confidentially with the Editors of this paper.

PATENT ROCK DRILLING MACHINE—The celebrated Rock Drilling Machine, invented by Messrs. Foster & Bailey, of this city, and described with an engraving on page 153 of Vol. 3 of the Scientific American; is now offered for sale in rights to suit purchasers. The machine has been thoroughly tested upon all kinds of rock, and its superiority over every other drilling machine that has yet been invented, must be apparent to every one who has had experience in using machines for this purpose. A silver medal was awarded to the inventors by the American Institute, and while it was exhibiting at the Fair for a few days, it attracted crowds to witness its simple but successful operation. A model of the machine, with the "Silver Medal," may be seen at the Scientific American Office, and any letters of enquiry concerning the purchase of rights may be addressed, (post-paid) to MUNN & CO.

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2	746 12-0	420
2	941 14-0	—
2	1246 15-0	203
2	55 4-9	—
2	77 4-10	—
2 1-4	355 15-0	497
2 1-2	250 15-0	210
2 3-4	349 15-0	180
3	— 15-0	290
4	23 15-0	18
5	1 15-0	—
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THOS. PROSSER & SON, Patentees,
August 27, 1850. 28 Platt st., New York.

BRUSH'S IMPROVED DOUBLE-ACTING LIFT AND FORCE PUMP.—From the increased facilities of the subscriber, he is now prepared to furnish, at a reduced price, the most effectual, powerful, durable and yet simple Lift and Force Pump in use. For a house pump, factories, breweries, railroad stations, or any other purpose where a constant stream of water is required, they cannot be surpassed. The public are cautioned against an article purporting to be Brush's Pump, but are invited to call at or address 83 Pike Slip, and get the original. J. A. BRUSH, Inventor. 49 3m*

CLOCKS FOR CHURCHES, PUBLIC Buildings, Railroad Stations, &c.—The subscriber having made important improvements in the construction of Clocks, especially in the apparatus for counteracting the influence of the changes of temperature upon the pendulum, and in the retaining power, (which keeps the clock going while being wound up,) together with a most precise method of adjusting the pendulum to correct time, are prepared to furnish time-keepers of a very superior quality, both for accuracy of time-keeping and durability. They speak with confidence, from having tested their performance for several years. The terms of payment will be so arranged as to afford purchasers ample opportunity to test their qualities. Address SHERRY & BYRAM, Oakland Works, Sag Harbor, Long Island.
40 3meow*

TO IRON FOUNDERS, &c.—Fine ground and bolted Sea Coal, to mix with moulding sand, an approved article ground from selected lump; Charcoal Foundry Blacking; Bolted Lehigh, Soapstone, Black Lead Foundry Facing; also Fire Clay, and Iron and Brass Founder's superior Moulding Sand, in barrels, for sale by G. O. ROBERTSON, New York. City Office 4 Liberty Place, Maiden Lane, near the Post Office. 47 4eow

JUST ISSUED—A new edition of Minifie's Mechanical Drawing Book, substantially bound in paper, which can be forwarded through the mail.—Price $3. For sale by MUNN & CO., Agents, New York. 42tf.

WILLIAM HOVEY'S PATENT SPIRAL Cylinder Straw Cutters are now manufactured by the Patentee, at Worcester, Mass., and not by C. Hovey & Co., their license to build and sell these celebrated machines having expired. No persons in Worcester have any right to make or sell these machines, except the patentee. All offered to the public as Hovey's Cylinder Straw Cutters may be considered spurious, unless the knives are attached to wings, cast on the cylinder, by nuts and screws, with set screws to adjust them on the cylinder. These machines are for sale in this city by John Mayher & Co., 197 Water st. WM. HOVEY, Patentee.
New York, Aug. 16, 1850. 49 3*

12 POWER PLANING MACHINES.—SCRANTON & PARSHLEY, New Haven, Conn., have now finishing off 12 power Planers that will plane 8 feet long, 27 inches wide and 24 inches high; these planers are of the first quality, are self-feeding every way; the table is worked by a rack and pinion; the bed is 12 feet long. With each planer there is a splining head and counter shaft, pullies and hangers. They weigh about 4000 lbs.; the price, boxed and ready to ship, is $625. Also 12 hand lathes, with back gear on iron shears, and legs 7 feet long, swing 20 inches, about 700 lbs. weight—$75. These lathes are of the first quality. 45tf

ALCOTT'S CONCENTRIC LATHES.—We have on hand a few of these celebrated Lathes, which the inventor informs us will execute superior work at the following rates :—

Windsor Chair Legs and Pillars, 1000 per 11 hours. Rods and Rounds, 2000; Hoe Handles, 800; Fork Handles, 500; Broom Handles, 150, per 11 hours.

This Lathe is capable of turning under two inches diameter, with only the trouble of changing the dies and pattern to the size required. It will turn smooth over swells or depressions of 3-4 to the inch, and work as smoothly as on a straight line, and does excellent work. Sold without frames for the low price of $25—boxed and shipped, with directions for setting up. Address, (post paid). MUNN & CO.,
14tf At this Office

TO PAINTERS AND OTHERS.—American Anatomic Drier, Electro Chemical graining colors, Electro Negative gold size, and Chemical Oil Stove Polish. The Drier, improves in quality, by age—is adapted to all kinds of paints, and also to Printers' inks and colors. The above articles are compounded upon known chemical laws, and are submitted to the public without further comment. Manufactured and sold wholesale and retail at 114 John st., New York, and Flushing, L. I., N. Y., by
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COTTON, WOOLEN AND SILK MANUFACTURERS' DEPOT.—ANDREWS & JESUP, No. 70 Pine st., N. Y., dealers in articles for the use of Cotton, Woolen and silk manufacturers, and agents for the sale of shearing, carding, burring, napping, wool-picking, flock-cutting and waste machines, regulators, satinet and jean warps, &c. Weavers' reeds and heddles, bobbins and spools, of every description, made to order. Sperm, lard and olive oils and oil soap. 40tf

TO INVENTORS.—The subscriber wishes to purchase the whole or part of some new, useful and patentable article adapted to the use of Housekeepers. Some labor-saving machine, (except washing machine) that can be introduced into any and every family,—a patented article would be preferred. As this article will be sold principally in the States of Ohio, Kentucky, and Indiana, it will not interfere with sales in any other States. Any person having "anything new" in the housekeeping line they wish to sell will please address, (post-paid) WILLIAM BURNET, No. 14 East Fourth st., Cincinnati Ohio. 49 4*

CUTTING ENGINE FOR SALE.—The subscribers have for sale a superior and handsomely finished Cutting Engine, for cutting either spur, bevel or spiral gearing, in infinite variety, from the smallest up to 5 feet in diameter, the index having 26,000 holes. The machine has been but little used, and when new cost $700, and is supplied with iron cones, loose and tight pullies for driving belts. Address TALLCOT & CANFIELD,
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WOOD'S PATENT SHINGLE MACHINES—These excellent machines, illustrated and described in No. 23, Vol. 5, Scientific American, are offered for sale in Town, County and State Rights, or by single machines. There are three sizes, the first cuts an 18 inch shingle, price, $100; 2nd cuts 24 inch, price $110; 3rd, 28 inch, $120. Orders addressed to J. D. Johnson, Redding Ridge, Conn., or to Munn & Co., "Sci. Am." Office, will meet prompt attention.

The above machine can be seen in successful operation at P. R. Roach's mills, No. 138 Bank st., this city. 36tf

MACHINERY.—S. C. HILLS, No. 12 Platt Street, N. Y., dealer in Steam Engines, Boilers, Iron Planers, Lathes, Universal Chucks, Drills Kase's, Von Schmidt's, and other Pumps, Johnson's Shingle machines, Woodworth's, Daniel's and Law's Planing machines, Dick's Presses, Punches, and Shears; Morticing and Tennoning Machines, Belting, machinery oil; Beal's patent Cob and Corn Mills; Burr Mill, and Grindstones, Lead and Iron Pipe, &c. Letters to be noticed must be post paid. 46tf

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JOSEPH P. PIRSSON, Civil Engineer,
46tf Office 5 Wall street, New York.

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Scientific Museum.

Means of Counteracting the Effects of Corrosive Sublimate.

Observing in your paper the death of Mr. James D. Hall, resulting from the accidental administering of Corrosive Sublimate, I am induced to make the following statement, with a view of counteracting such disastrous results. Death from the accidental taking of Corrosive Sublimate is not an unfrequent occurrence, and yet the action of the poison may be arrested, if the right means are used promptly. The corrosive matter acts upon the stomach by means of the acid, and if something is taken at once to neutralize the acid while the poison is removed from the system by emetics and cathartics, the patient will recover. For this purpose, a strong and copious solution of pearlash or salæratus should be instantly administered. A fact in personal experience will perhaps be pardoned in this connection.

I was once boarding at a house, where, by some accident, a bottle containing corrosive sublimate for the extermination of bugs, was filled with cider and placed among the other bottles of cider. That the liquid was thoroughly saturated with the poison was made evident by the fact that, on breaking the bottle subsequently, a large portion of sublimate was found undissolved. The tumblers were filled from this bottle as we sat down to dinner, and being quite thirsty from a long walk, I immediately drank half a tumbler full. Instantly after drinking, I felt an intense burning and pain, accompanied with a fainting sensation. I perceived that I had taken Corrosive Sublimate.

I called for pearlash; in a few moments two physicians were present, and while they were debating whether first to administer the white of eggs or an emetic, I seized a handful of pearlash, stirred it in a bowl of water, and drank it down. The effect was like that of throwing water upon a fire. It kept the action of the poison in abeyance, while emetics and cathartics had time to take effect and clear the system. I was of course much weakened for a day or two, but not materially injured. An elderly lady who sat next to me at table, and drank at the same time, but took less than half the quantity that I did, lingered for a time, and died. She did not use the pearlash, but only took the white of eggs in connection with emetics cathartics. I urged the instant administering to her of the same remedy that I took myself, but her physician would have his own way.

The white of eggs is no doubt very good to absorb the poison and avert corrosion, but it is not so readily obtained, nor so quickly administered, nor so diffusive and prompt and sure in its action, as that which I have recommended. It may be taken to advantage, especially if prompt means are not used to remove the poison from the system, but let the alkali be used first of all and most of all, and let not one minute be lost in debating.

[The above is from the Boston Traveller. We publish it on account of its real value.

French Polish.

This is an alcoholic solution of shellac, some of the softer resinous gums are usually added, but too much of them renders the polish less durable. Highly rectified spirit, not less than 60 over proof, should be used. Rectified wood naptha is sometimes substituted, to which the unpleasant smell is the only objection. 1st. Orange shellac 22 oz., rectified spirit 4 pints, dissolve. 2nd. Shellac 3 oz., gum sandrac ½ oz., rectified spirit 1 pint. 3rd. Shellac 4 oz., gum thus. ½ oz., rectified spirit 1 pint, dissolve and add almond or poppy oil 2 oz. 4th. Shellac 5 oz., oxalic acid ½ oz., rectified spirit 1 pint, dissolve and add linseed oil 4 oz. 5th. Shellac 10 oz., seed-lac 6 oz., gum thus. 3 oz., sandaric 6 oz., copal varnish 6 oz., rectified naptha, or dissolve 8 oz. each of seed-lac, gum thus. and sandarac, separately in a pint of naptha; and 1 lb. of shellac in 8 pints of naptha. Then mix 6 oz. of copal varnish, 12 oz. of solution of seed-lac, 6 oz. of solution of frankincense, and 12 of solution sandarac, and 5¾ lbs. solution of shellac. Let the copal varnishes be put into the tincture of shellac, and well shaken, and the other ingredients be added. A correspondent informs us that this polish cannot be excelled. 6th. Copal ¼ oz., gum arabic ¼ oz., shellac 1 oz., pulverize, mix and sift the powders, and dissolve in a pint of spirit.

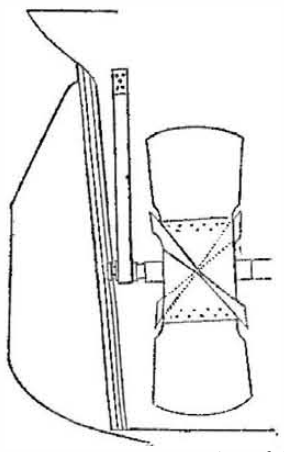
French polish is sometimes colored with dragon's blood, turmeric root, &c. The general directions for preparing the polish are to put the gums with the spirit in a tin bottle and set it on the stove or in water, so as to keep it at a gentle heat, shaking it frequently. The cork should be loosened a little before shaking it, taking care that there is no flame near to kindle the vapor. When the gums are dissolved let it settle for a few hours and pour off the solution from the dregs. The method of using it is to have a roll of list, over the end of which five or six folds of linen rags are placed. The polish is applied to the linen with a sponge and a little linseed oil is dropped on the centre of it.

History of Propellers and Steam Navigation.

[Continued from page 392.]

LOPER'S PROPELLER.

FIG. 82.



This propeller is the invention of Captain Loper, of Philadelphia, and its good character is so well established, that it requires no further eulogy than to say, that more of these kind of propellers are now employed on vessels in the United States than any other, and on vessels of every class of burden, from the small canal boat to the first class steamship.

The accompanying engraving represents the Loper Propeller, as applied to the trial U. S. Revenue Steamer "Spencer." The diameter of the propeller is 8 feet, width of blade at hub 2 feet 3 inches—at outside 4 feet 4 inches. The angle of the blades at the hub 30°, at the outside 54°. It was driven by the common intermediate gearing of cog wheel and pinion.

Screw propulsion has received the earnest attention of eminent engineers in America and Europe, and is now regarded as more economical than side wheels, but only as auxiliary to sails, for they are not so fast as steamers with side wheels.

Whatever may be said of the different kinds of bladed screw propellers, there does not seem to be one superior to the Woodcroft Propeller. The Sarah Sands and the City of Glasgow are fitted with this kind, and they are the only two steamships which have attempted the regular navigation of the Atlantic. The latter steam propeller has done wonders: its success has induced the contemplation of a "Line of Propellers" by a powerful company, to ply in the merchant service between New York and Liverpool.

The question of exclusive steam navigation is only one of economy, and the auxiliary screw propeller presents advantages in this respect, which are worthy of serious consideration by all those engaged in the shipping business.

The city of Philadelphia is the seat of constructing American Propellers, and there the "Loper Propeller," is the favorite. At the present moment, at a single establishment in Kensington, Messrs. Reaney, Neafie & Co., machinery is now in the progress of construction for nine "Loper Propellers." This shows in what a favorable light this propeller is regarded.

Colors.

In these, the ancients certainly far exceeded the moderns. Sir Humphrey Davy made many efforts to analyze the celebrated Tyrian purple of the East; but these efforts were without success. He declared he could not discover of what it was composed. The Naples yellow, too, though less known, was much used, and the art of making it is now entirely gone. The Tyrian purple is the color of many houses of Pompeii, and they look as fresh as if just painted.

The colors of Titian are equally as vivid and beautiful as when first laid on by the great artist, while those of Sir Joshua Reynolds already look chalky and dead. And Sir Joshua himself confessed, after making it the study of his life, that he had never been able to discover how Raphael and the other great artists had been able to preserve the beauty and brightness of their paintings. But if we marvel at these artists, three centuries back, what shall we say of those paintings found in the tombs of Egypt, more than two thousand years old, and yet kept fresh and bright, though buried for that time beneath the ground, in the damp, dark caves of the East!

The very wife of Solomon is found there, just as she was painted on the eve of departure from her father's home, to share the throne of Judea, and not only the color of her garmets were preserved, but the bloom is still on her cheeks and lips, and the lustre in her eye is even as it then was. Their paintings, too, date as far back as the time of Moses; a portrait supposed to be that of the Nice, the king who drove the Israelites into the Read Sea, has the colors of it preserved perfectly.

Hard Coal Ashes.

Though Prof. Norton thinks these may prove of value, as an application to the soil, a writer in the Mass. Ploughman cautions farmers against their use for or with manure,—because of the oxide of iron, which is very injurious to trees, and that their alkaline properties are so trifling as to be unworthy of preservation. Experiment will decide between them, and it is a question of some importance in the neighborhood of cities, while so many bushels are thrown away, if they turn out to be of any considerable value.—[RURAL YORKER.

[We once saw hard coal ashes applied to a four acre field of potatoes—the result was a crop which did not pay for the digging; the season was a good one, so nothing but the ashes could be blamed. Next year a crop of oats yielded as poorly as the potatoes. Hard coal ashes, we believe, should not be used for any purpose but road making.

White Hair and Black—"A Fact Worth Knowing."

Uuder this head the True Union, publishes the following from "an authentic source."

"A distinguished General (Twiggs,) returned from the Mexican war covered with 'glory.' He had, however, two marks of hard service which laurels could not hide—as they did Cæsar's baldness. One was a head as white as wool; and the other a cutaneous eruption on his forehead. For the latter he was advised to try a mixture of sulphur, and sugar of lead and rose water. In applying it, some of the mixture moistened his forehead, and after a while resumed its original color. He then applied the mixture to all his hair, and it all became, and is now, of its primitive and sandy hue. He communicated the fact to some of his friends in Washington—especially to some ex-members, who are widowers and seeking preferment—and it has been found efficacious in every instance. It does not dye the hair, but seems to operate upon the roots, and restore the original color.

"The recipe is as follows:—1 drachm Lac Sulphur, ½ drachm Sugar of Lead: 4 ounces Rose Water; mix them: shake the phial on using the mixture, and bathe the hair twice a day for a week or longer if necessary."

[The theory of the above is neither new nor valuable: it is the sulphuret of lead applied to dye hair its own color. The nitrate of silver is much better, but those who consult their health and a steady brain, will refrain from both, and prefer the snowy locks of nature to the sable locks of art.

Giant's Bones.

A week or two since Mr. John Harned, living on Rolling Fork, about 12 miles from this place, discovered a human bone protruding out of the sand on the river bank. It proved to be a thigh bone, perhaps the largest ever seen. It measures about six times the number of cubic inches as that of a common sized man. Judging from the size of the bone found, it once belonged to a human being some 12 or 13 feet high. Mr. Harned has also found a collar bone, which is about the same proportion. That it is a human bone there can be no doubt.—[Elizabethtown (Ky.) Register.

[Yes there is a doubt about its being a human bone.

NEW PROSPECTUS OF THE SCIENTIFIC AMERICAN.

TO MECHANICS, INVENTORS, AND MANUFACTURERS.

The Publishers of the SCIENTIFIC AMERICAN respectfully give notice that the SIXTH VOLUME of this valuable journal will be commenced on the 21st of September next, offering a favorable opportunity for all to subscribe who take an interest in the progress and developement of the Mechanics' Arts and Manufactures of our country. The character of the SCIENTIFIC AMERICAN is too well known throughout the country to require a detailed account of the various subjects discussed through its columns.

The aim of the publishers has always been to render it the most thorough and useful Scientific Journal in the country, and to judge of this by comparing its circulation and influence with other publications of the same class, they have the unequivocal evidence of its value, as the leading exponent of the Arts and Sciences.

While advocating the great interests upon which the prosperity of our people so much depends, it does not fail to expose the numerous evils into which inventors, as well as the public, are often led, by false representations concerning the value and practicability of new discoveries. Each volume contains an amount of practical information unprecedented by any other similar publication, and every subject is expressed with such precision, that no one, however illiterate, can fail to understand its import. Hitherto publications of a scientific character have been rendered unintelligible to the mass of the people by the use of abstruse terms. This objectionable feature is studiously avoided in the description of all the new discoveries which appear in the columns of this journal.

It will be published weekly, as heretofore, in *Quarto Form*, on fine paper, affording, at the end of the year, an *ILLUSTRATED ENCYLOPEDIA*, of over FOUR HUNDRED PAGES, with an Index, and from FIVE to SIX HUNDRED *ORIGINAL ENGRAVINGS*, described by letters of reference; besides a vast amount of practical information concerning the progress of SCIENTIFIC and MECHANICAL IMPROVEMENTS, CHEMISTRY, CIVIL ENGINEERING, MANUFACTURING in its various branches, ARCHITECTURE, MASONRY, BOTANY,—in short, it embraces the entire range of the Arts and Sciences.

It also possesses an original feature not found in any other weekly journal in the country, viz., an *Official List of PATENT CLAIMS*, prepared expressly for its columns at the Patent Office,—thus constituting it the "*AMERICAN REPERTORY OF INVENTIONS.*"

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Any person who will send us four subscribers for six months, at our regular rates, shall be entitled to one copy for the same length of time; or we will furnish—

10	copies for	6	months,	$8
10	"	12	"	$15
15	"	12	"	$22
20	"	12	"	$28

Southern and Western Money taken at par for subscriptions; or Post Office Stamps taken at their full value.

PREMIUM.

Any person sending us three subscribers will be entitled to a copy of the "History of Propellers and Steam Navigation," re-published in book form—now in press, to be ready about the 1st of October. It will be one of the most complete works upon the subject ever issued, and will contain about ninety engravings

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